Site Investigation Interpretive Report

for

Estover Community College, Miller Way, Estover, Plymouth.

for
A Proposed Redevelopment
to

Estover Community Campus

for

Kier Western

on behalf of

Plymouth City Council

Index

1.0 Introduction

Jenkins and Potter are acting as the Civil and Structural Engineers for the development of designs for the new development proposed at Estover Community Campus. Various organisations have carried out investigations relating to the site and the proposed development. This interpretive report brings together these documents and interprets the results for use in the design process. As the scheme is developed additional testing will be added to the report as further appendices. Since the development will be constructed over several phases over two to three years the report will also be updated as necessary during the early construction process.

The site is currently used as Estover School which is a secondary school. There is a nursery school on the same site which is to remain. Another building named the Soundhouse is also to remain.

It is intended that the existing school will remain operational whilst the new campus is constructed in phases around the existing structures. Phased handover and demolition will allow the complete campus to be constructed and the existing buildings demolished.

2.0 The Site

The site is located in Estover to the north west of Plymouth city centre and is 700m to the south east of Plymouth airport. The site is accessed by and bounded to the west by Miller Way, Dover Road bounds the north of the site, Leypark Drive to south of the site and Leypark Walk to east of the site. The National Grid reference for the centre of the site is 250980, 58920.

3.0 Desk Study

A desk study, site walkover and preliminary interpretive report was carried out by Faber Maunsell and the report issued in April 2006. This report is included in Appendix A and the details will not be repeated here.

4.0 Intrusive Investigation and Geo-Interpretive Report

An interpretive report has been prepared by Faber Maunsell in August 2006. This report is included in Appendix B and the details will not be repeated here.

This early investigation and interpretive report covers part of the site that was originally intended to be the location of the proposed Hospital School. It therefore covers only part of the site of Estover Community Campus.

Further trial pits, soil tests and infiltration tests were carried out over the remainder of the site in August 2007 and a Factual Report issued by CJ Associates in October 2007. This report is included in Appendix C.

5.0 Environmental Report

An environmental report has been prepared by Faber Maunsell for the proposed new campus and the report issued in May 2007. This report is included in Appendix D and the details will not be repeated here.

6.0 Geotechnical Assessment

6.1 Proposals

The proposed development involves the construction of a new two storey secondary school, a two storey primary school and a single storey special needs school. The development includes a sports hall, public library and external works including car parks, MUGA's and playing fields. The construction work is to be divided into three phases and generally built around the existing school buildings.

6.2 Ground Conditions

Details of the ground conditions are included in the various factual and interpretive reports in the Appendices. The ground conditions were generally consistent across the site and the stratigraphic sequence typically comprised made ground, localised areas of silt/clay, fine to coarse gravel underlain by slate.

Groundwater was not encountered in any of the excavations.

Slate was encountered in most of the trial pits at depths of between 1.3m and 2.3m. The stratum is described as a moderately weak to moderately strong with thin laminae and with very closely spaced sub-vertical fractures in situ. The slate was recovered as slightly clayey slightly sandy gravels.

6.3 Foundation Design and Performance

Favourable ground conditions for the construction of pad foundations and strip footings were encountered. The state bedrock will provide the firm bearing stratum. Foundations should be founded 200mm into the top surface of the bedrock to ensure that they are onto unweathered material. Because of the sloping nature of the site and the unpredictable depth to the bedrock horizon strip footings may be replaced with ground beams spanning between pad foundations to reduce the volume of concrete and spoil.

A design safe net bearing capacity of 275 kN/m2 can be used for design for foundations founded into the slate bedrock. For deep foundations mass concrete backfill can be utilised to raise the levels to the underside of the designed foundations.

Since foundations are to be founded on bedrock, consolidation settlement of foundations will be minimal and the overall settlements should be within normally acceptable limits.

6.4 Groundwater and Excavations

Groundwater was not encountered in any of the excavations and it is therefore unlikely that groundwater ingress into foundations will be encountered during construction. Any minor seepage or surface water runoff would be adequately dealt with by simple pumping from sumps as necessary.

Excavation to the proposed foundation depths is not expected to pose any particular problems for normal excavation plant, on the basis of the trial pit investigations. The foundation excavations should be open for as minimum time as possible to limit the risk of collapse of the trench sides and deterioration of the exposed formations.

6.5 Floor slabs

Provided all topsoil and made ground is removed and replaced with appropriate engineered fill, traditional ground bearing floor slabs are appropriate. Where the depth of required fill is in excess of 600mm consideration should be given to using suspended floors to reduce the risk of differential settlement.

6.6 Sulphate attack on Concrete

Based on the various results from the site investigations for sulphate concentrations and pH values across the site and with reference to BRE special digest SD1 (2005), a design sulphate class of DS-1 and an ACEC class of AC-1 is recommended for the site.

6.7 Pavement Design

The preliminary CBR testing indicated widely varying CBR values across the site. Since the site is large and the levels and depths vary considerably it is considered that regular CBR testing will be required in areas of hardstanding to confirm the strength of the formation and determine the need, if any, for capping layers.

7.0 Soakaways

Soakaway tests in general accordance with BRE Digest 365 were undertaken by Faber Maunsell in the original site investigation and further testing was carried out by CJ Associates. Results are included in the reports in the appendices. The results vary across the site but indicate that soakaways into the top of the slate bedrock are feasible.

Soakaway designs should be based on infiltration results located at the locations of the soakaways. Additional testing was carried out in October 2008 prior to the design of the overall storm drainage system. This produced infiltration rates for the majority of the site where storm drainage soakaways are proposed. A further test will still be required under the footprint of the existing school, when the existing school is finally demolished.

The results of the infiltration tests carried out in October 2008 are provided in Appendix E.

8.0 Environmental Assessment

8.1 Contamination Assessment

An assessment of the contamination risk is included in the Environmental Report included in the appendices.

8.2 Contamination Results

Chemical analyses were carried out on 10 samples during the CJ Associates investigation and 3 samples in the earlier investigation by Faber Maunsell. Results are included in the relevant appendices.

The results were compared with DEFRA/EA Soil Guideline Values (SGV's) and, where SGV's are not available, values based on adjusted Dutch Intervention values. The proposed end-use of the site is commercial and therefore the results have been compared against the guideline/target values for this end use.

All 13 samples were found not to contain any elevated concentrations of determinants when compared against the SGV or target values for a commercial end use.

8.3 Removal of Excavated Material

If materials are to be removed from site the criteria for disposal to landfill facilities varies. While disposal of material from this site is unlikely to be problematic, acceptance is at the discretion of the landfill operator and Environment Agency. Prior to disposal off-site of any excavated material these bodies should be consulted. The investigation carried out by CJ associates included 3 waste acceptance criteria tests. These results may be required by the landfill operator prior to disposing of material.

The latest Landfill Directive makes off-site disposal of contaminated soils more difficult. The testing has been directed towards assessing the human health risk as opposed to off-site disposal. Therefore if at all possible materials should be retained on site. If any "hot spots" are found during construction work then this material should be retained in a location where it poses no unacceptable human health risk, possibly below areas of suspended floor.

8.4 Radon

In accordance with the publication of BRE Report BR211 "Radon Guidance and Protection Measures for New Dwellings", the site appears to be in an area where basic radon protection is required. This is confirmed in the Environmental Report.

To confirm that the level of protection required is "basic" it will be necessary to obtain a site specific radon report from the British Geological Survey.

Prepared by:	G J BARTLETT	Date: 3 February 2009
Approved by:	G J BARTLETT	Date: 3 February 2009

Appendix A

Ground Investigation – Desk Study

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1 Introduction

1.1 Reason for report

On the instructions of EC Harris, acting on behalf of Plymouth City Council, Faber Maunsell has undertaken a combined desk study and interpretative report for the proposed development at Estover Community College. The project was commissioned in order to obtain and collate information on the geotechnical and environmental characteristics of the site in relation to the proposed development and assess the potential liabilities associated with the development.

1.2 Brief to the Project

The project was carried out to an agreed brief and has included the following tasks:

- A site walkover aimed at identifying any obvious geo-environmental or geotechnical hazards on site.
- A review of historical Ordnance Survey maps aimed at identifying the development of the site and possible environmental hazards;
- A review of published British Geological Survey maps;
- A review of published hydrology and hydrogeology maps and data;
- A review of geotechnical risks, including current / historic mining;
- A preliminary qualitative assessment of the environmental liability issues associated with the site;
- A limited ground investigation to determine the depth to suitable bearing strata.

1.3 Proposed Development

It is proposed to re-develop the existing campus and replace the majority of the existing buildings. It is proposed to combine the primary and secondary schools on one site and the existing music block is proposed to be retained as part of the re-build. The existing primary school may be sold for future residential development.

1.4 Limitations to the report

This document has been prepared by Faber Maunsell Limited ("Faber Maunsell") for the sole use of the client entity detailed above (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms and reference agreed between Faber Maunsell and the Client.

Any information provided by third parties and referred to herein has not been checked or verified by Faber Maunsell, unless otherwise expressly stated in this document.

No third party may rely upon this document without the prior and express written agreement of Faber Maunsell.

The information reviewed as part of this report should not be considered exhaustive and has been accepted in good faith by Faber Maunsell as providing a true indication of the site conditions. However, no liability can be accepted for the detailed accuracy or otherwise of any of the reports or documents prepared by others for the Client or for third parties, or for any associated errors or omissions.

The exploratory holes carried out during the fieldwork which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of the site conditions. The comments made and recommendations given in this report are based on the ground conditions apparent at the site of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on the groundwater conditions are based on observations made at the time that site work and subsequent monitoring were carried out. It should be noted that ground water levels would vary owing to seasonal or other effects.

It should be noted that the environment and contaminated land guidance and legislation are constantly under review, with authoritative guidance documents subject to change. The conclusions presented herein are based on guidance and legislation available at the time of issuing this report, and no liability can be accepted for the retrospective effects of any changes or amendments to such guidance and/or legislation.

Environmental liability issues associated with the site and/or its sale/purchase have not been covered by this report.

1.5 Sources of Information

Various sources of Information have been utilised during this report in order to identify historical and environmental changes. These sources include the following: -

- Landmark Envirocheck Report, ref: 21330175_1_1;
- British Geological Survey solid and drift 1:50000 scale map of Ivybridge (sheet 349);
- The BRE 211 report "Radon: guidance on protective measures for new dwellings", (1999);
- National Radiological Protection Board (NRPB) "Radon Atlas for England and Wales", (2002);
- Faber Maunsell Interpretative Report for Plymouth Hospital School, Estover, Plymouth, reference 48672 IBRG/A (August 2006);
- Tomlinson "The General Principles of Foundation Design", 7th edition (2001);
- Department for Environment, Food and Rural Affairs (DEFRA) "CLR 8 - Potential contaminants for the assessment of land" (2002);
- Contaminated land legislation: Environmental Protection Act 1990, Part 2A.

2 Site Conditions

2.1 Site Location & Description

The site is located in Estover to the northwest of Plymouth city centre and is 700m to the southeast of Plymouth airport. The site is accessed by and bounded to the west by Miller Way; Donner Road bounds the north of the site, Leypark Drive the south of the site and Leypark Walk the east of the site. The National Grid reference for the centre of the site is 250980, 58920 and a site location plan is provided as Figure 1.

The site is predominantly occupied by a nursery, primary school and comprehensive school with associated playing fields, tennis courts and car parking and other buildings. The structures are located in the western half of the site with the eastern half comprised of (sports) fields. The site boundary is defined by a metal fence which is partially screened with trees/hedgerows.

2.2 Geology

With reference to the British Geological Survey 1:50000 solid and drift map of Ivybridge (sheet 349), the site is underlain by slate and igneous tuffs / volcanic ash deposits of Devonian age. Two east/west orientated igneous dyke intrusions are located adjacent to / on the northern site boundary. The site is not located in an area of faulting. No superficial deposits are indicated on the map.

The current investigation across the site and the previous investigation to the north of the site both confirmed the published geology. The investigations identified the presence of sandy clay underlain by clayey sandy gravel on top of moderately weak to moderately strong mudstone; an intrusive igneous rock (possibly basalt) was identified in one location in the southern section of the site.

2.3 Radon

The National Radiological Protection Board (NRPB) "Radon Atlas of England and Wales" indicates that the site is situated in an area where 3% to 10% of dwellings have average radon levels above the recommended action level of 200Bq/m^3 of air per year. With reference to the BRE 211 "Guidance on Protective Measures for New Dwellings" it is indicated that basic measures may be required. Furthermore, a standard British Geological Survey assessment has been undertaken at the college and identifies the requirement for basic radon protection measures for new developments.

2.4 Hydrogeology

The Envirocheck report indicates that the site is underlain by a minor aquifer. The soils are classified as having a high leaching potential although this is based on a limited dataset due to the urban setting. There are no Source Protection Zones indicated in the area surrounding the site.

There are three water abstraction locations identified within 1000m of the site boundary; they are located at 259m & 399m to the southwest and 685m, to the northwest for agricultural use, private use and industrial use respectively.

2.5 Hydrology

The nearest surface water feature is located 148m to the northwest of the site which is a tributary of the River Plym; further tributaries are located 150m to the west and 250m to the southeast/east of the site. There are no Source Protection Zones in force within the Plymouth area.

A flood risk map, provided as part of the Envirocheck report, indicates that the site is not at risk from normal or extreme flooding. The areas immediately surrounding the tributaries of the River Plym are identified as susceptible to flooding in areas without flood defences.

3 Site Development

3.1 General

A series of Ordnance Survey and County historical maps from 1867 to 1994 and Russian military maps from 1981 have been obtained as part of the Envirocheck report. The mapping has been used to build a summary of the changing land uses on the site and in the surrounding area; copies of the plans are included in Appendix A. The information has been used as a guideline to facilitate an assessment of the geotechnical and environmental ground conditions; it is not possible to identify the presence of specific contamination from historical mapping although potentially contaminative industries in the vicinity of the site can be identified.

A summary of the available information is given in Table 3.1.1 but it must be noted that the indication of a development relates only to the date the particular map was published, and that any features noted may have become present prior to that date. All distances are taken from the site boundary as indicated on the historical maps and only the features considered to be relevant to the site have been included.

3.1.1 Summary of Historical Development

Date & Scale	Summary of Development
1867 1:2500	The site is occupied by open fields with no notable development identified. A small area of woodland is also identified within the site boundary. A river is located 170m to the north and west and a well is located 230m to the southwest. An unnamed tunnel, running approximately northeast/southwest, is located 240m to the south of the site. Higher Leignham is located 180m to the south and Thornbury Cottages and Estover House are located 180m and 220m to the north. A quarry is situated 170m to the north.
1886 1:10560	The tunnel, located to the south of the site, is identified as part of the *Plymouth & Dartmoor Tramway*. A spring is located 450m to the southwest. Quarries are situated 300m west, 500m northwest, 650m to the east, 800m to the southeast and 1000m to the southeast of the site.
1906/07 1:2500 1:10560	An unlabelled building is situated immediately adjacent to the eastern site boundary. A spring is identified 160m to the north, between the previously identified quarry and Thornbury Cottages, and at 700m to the northwest. A further pit (unnamed/unidentified) is present 160m to the west, adjacent to the river.
1933/1938 1:10560	No significant change.

1951/52 1:2500 1954 1:10560	There are two air shafts located 240m and 290m to the south of the site, associated with the previously identified tunnel. The tunnel itself is identified as Leigham Tunnel and is labelled as disused; a dismantled tramway is noted running into the tunnel. Maidstone wood and quarry are located 800m to the east. The river valley to the west is identified as *Forder Valley.* *Forder Battery* is located 900m to the southwest; a number of air shafts are identified to the north of the battery.
1968 1:10560	No significant change. A third air shaft is identified to the south, associated with the disused tunnel.
1971/1979 1:2500	Estover Primary School is identified in the southern section of the site with adjacent playing fields and a 'tank' to the east. Novorossick Road is identified to the east of the site and Dover Road is labelled to the north. Residential development has occurred to the north and south of the site. Residential development has advanced up to the site boundary to the north, west and south. Miller Way is identified adjacent to the west of the site. Leypark Drive and an industrial estate have been developed adjacent to the south of the site. An electrical sub station is noted in the area at approximately 40m to the south of the site boundary.
1981 (Russian) 1:10000	No significant change.
1980/1981/ 1982/1983/1984 1:2500 1982 1:10000	Estover Comprehensive School has been developed in the western section of the site, immediately to the north of the infants school. A further industrial area has been developed 400m to the northeast of the site. An airport runway is located 700m to the north of the site. Derriford Hospital is located at 900m to the northwest of the site and a college has been developed 1000m to the northwest.
1992/1993 1:2500	An electricity sub-station is located 80m to the northwest of the site.
1994 1:2500 1:10000	The industrial estate to the northeast is labelled as Estover Industrial Estate. The runway, identified in 1982, is labelled as Plymouth City Airport.
1999 1:10000	No significant change.
2004 1:10000	No significant change.

3.2 Environmental Information

Local nature reserves are located within the river valley to the west, located at 276m south, 433m west and 747m southwest of the site. The areas 781m northeast and 900m northwest of the site are designated as a Site of Special Scientific Interest (SSSI) for the occurrence of the only known wild populations of Plymouth Pear.

A landfill site is identified 827m to the northwest of the site on Derriford Road; the type of waste is not identified from the available data contained within the Envirocheck report. However, previous intrusive investigations adjacent to the identified landfill indicated the presence of heterogeneous domestic waste.

4 Previous Ground Investigation

4.1 **Previous Investigation – Estover Hospital School (August 2006)**

An intrusive ground investigation was undertaken by Faber Maunsell in August 2006 for the proposed development of Estover Hospital School. The investigation was undertaken on the overflow car park, which was constructed with gravel hard-standing, to the north of the comprehensive school. The scope of works comprised of six trial pits to a maximum depth of 2.7m bgl and two soakaway tests. Geotechnical and geo-chemical laboratory testing was undertaken on samples recovered.

The general ground conditions were found to be relatively consistent across the site and comprised of made ground underlain by clay, gravel and slate.

4.1.1 *Made Ground*

The made ground was located to a maximum depth of 0.6m bgl and typically comprised of gravel of mudstone, limestone and tarmac in a clay matrix; a geotextile membrane was identified at 0.25m bgl to 0.6m bgl in locations immediately adjacent to the northern boundary of the comprehensive school.

4.1.2 *Clay and Gravel*

The clay was only encountered in half of the trial pits to a maximum depth of 0.9m bgl; it comprised of slightly sandy clay with a little gravel of mudstone. The gravel was found directly underlying the made ground or underlying the clay; it comprised of slightly clayey gravel of slate lithorelics to a maximum depth of 2.3m bgl.

4.1.3 *Slate*

Slate was encountered between 1.3m bgl and 2.3m bgl and comprised of moderately weak to moderately strong slate with closely spaced sub-vertical fracturing.

4.1.4 *Groundwater*

Groundwater was not encountered in any location during the works. The soakaway testing was undertaken within the gravel stratum and returned a design infiltration rate of 2.4×10^{-5} m/s.

4.1.5 *Geotechnical Testing*

Laboratory testing was undertaken on representative samples recovered from the clay in TP2, TP5 and TP6 at depths of 0.3m bgl to 0.7m bgl; the testing included Atterberg limit testing and Proctor testing.

The Atterberg results indicated that the tested samples are classified as high to very high plasticity silts. The modified plasticity, according to guidance outlined in NHBC Chapter 4.2 (2006), is calculated as a low volume change potential.

Compaction testing was undertaken with a 2.5kg rammer and returned an optimum moisture content of 19%; the natural moisture content of soils from the same location was found to be slightly wet of optimum at 21%.

4.1.6 *Sulphate and pH*

Three samples were analysed for sulphate content and pH for classification according to BRE SD1 "concrete in aggressive ground" (2005). The samples were recovered from the made ground, gravel and slate strata at depths of 0.35m bgl to 2.2m bgl. A maximum sulphate content of <0.1mg/l was returned corresponding with a Design Sulphate Class of DS-1 and an Aggressive Chemical Environment for Concrete class of AC-1.

4.1.7 *Geo-chemical Testing*

Three samples were recovered from the made ground and gravel at depths of 0.3m bgl to 0.9m bgl. The samples were tested for solid determinands including heavy metals, Total Petroleum Hydrocarbons and Poly-Aromatic Hydrocarbons.

The concentrations were compared against a commercial end use using adopted guideline values based on the CLEA model, and where these were not available, adjusted Dutch Intervention Values. The results indicated that heavy metal and hydrocarbon determinands were below the adopted guideline concentrations. Hydrocarbons were indicated at very low maximum concentrations of 1mg/kg for poly-aromatics and 4.29mg/kg for total aliphatics and aromatics.

Two samples were tested, from a depth of 0.3m bgl, for Waste Acceptance Criteria classification. The results returned determinand concentrations below the leaching limit values for inert waste in both samples. However, the logs indicate the presence of tarmac in the samples which would not be classified as Inert.

5 Ground Conditions

5.1 General

An intrusive ground investigation was undertaken by Geotechnical Engineering Ltd, under guidance from Faber Maunsell, from 17th to 19th April 2007. The works were undertaken to obtain an understanding of the general ground conditions across the site and the scope comprised of seven boreholes to a maximum depth of 4.5m. A copy of the logs and an exploratory hole location plan showing the position of each borehole is included in Appendix B.

The ground conditions were found to comprise of topsoil, underlain by sandy gravely clay, underlain by mudstone/slate or, in the extreme south of the site, suspected basalt. The bedrock was proven by at least 2m to prove the extent and competency of the strata. A summary of the ground conditions is provided below.

5.2 Topsoil

The topsoil was encountered form ground level to a maximum depth of 0.4m bgl. It comprised of grass over brown sandy clay with a little sub-angular gravel of sandstone and mudstone.

5.3 Sandy clay

The clay was encountered to a depth of between 0.6m and 1.0m across the site. The stratum comprised of brown sandy clay with sub-angular gravel of mudstone and siltstone; occasional cobbles and boulders of diorite were encountered in BH9 only. The stratum was absent in BH4, BH5, BH6, BH7 and BH8 where topsoil was encountered directly overlying bedrock.

5.4 Mudstone/Slate

The mudstone was encountered all holes, except for BH9, from 0.6m bgl and proven in extent to the base of the hole. The stratum comprised of very weak orange-brown to grey micaceous mudstone and siltstone. Fracturing was noted as sub-vertical >65° and extremely to very closely spaced sub-horizontal irregular. Occasional laminations of clay and sub-angular quartz gravel were noted in some locations. Rare randomly orientated secondary quartz veins were noted in BH4, BH5 and BH6.

5.5 Basalt

The basalt was encountered from 1.2m bgl in BH9 directly underlying the sandy clay stratum. The rock comprised of moderately strong grey, mottled black crystalline basalt. The stratum was noted to become very weak and highly weathered between 1.4m bgl and 4.2m bgl with locally moderately weathered areas at 4.2m bgl tot 4.5m bgl.

5.6 Groundwater

No groundwater strikes were encountered before the addition of water for rotary coring.

5.7 Standard Penetration Testing (SPT)

SPT testing was undertaken within the boreholes at the base of the inspection pit and after each coring run. After the identification of bedrock no further SPT tests were undertaken after an initial refusal result was returned.

The results indicated SPT N values of 23 to 50 in the weathered mudstone at depths of 1.2m bgl to 2.2m bgl. Refusal was encountered in the more competent mudstone and basalt at depths of 1.1m bgl to 4.5m bgl.

6 Background to Legislation on Contaminated Land

6.1 Contaminated Land

Part IIA of the Environmental Protection Act 1990, defines Contaminated Land as follows:

"Any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –

a) SIGNIFICANT HARM is being caused or there is a SIGNIFICANT POSSIBILITY of such harm being caused;

Or

b) SIGNIFICANT* POLLUTION OF CONTROLLED WATERS is being caused, or there is a SIGNIFICANT POSSIBILITY of such pollution being caused."

*To be implemented under the Water Framework Directive and Water Act

6.2 Risk Assessment

The definition of Contaminated Land under Part IIA of the Environmental Protection Act 1990 is based upon the principles of risk assessment. For the purposes of this guidance, "risk" is defined as the combination of:

a) The probability, or frequency, of occurrence of a defined hazard (for example, exposure to a property of a substance with the potential to cause harm);

And

b) The magnitude (including the seriousness) of the consequences.

6.3 Pollutant Linkage

The basis of an environmental risk assessment involves:

- Identifying a source of contamination;
- Identifying a pathway/media through which the contamination may migrate; and
- Identifying a receptor or target at risk from the contamination.

Current legislation gives the following the definitions:

A contaminant is a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters.

A pathway is one or more routes or means by, or through, which a receptor:

a) is being exposed to, or affected by, a contaminant, or
b) could be so affected.

A receptor is either:

a) a living organism, an ecological system or a piece of property; or
b) controlled waters.

The term 'pollutant linkage' indicates that all three elements (i.e. contaminant / pathway / receptor) have been identified. The site can only be designated as Contaminated Land if there is a pollutant linkage and the contamination meets the criteria.

7 Environmental Assessment

7.1 General

The following review is aimed at identifying the possible environmental risk to the site arising from substances present in, on and surrounding the site. The assessment takes into consideration the geo-chemical results (as discussed in Section 6), sources of possible risk and the presence of any plausible pathways or receptors as outlined in the Environmental Protection Act 1990 (Part 2A). An assessment of risk has been undertaken using a risk matrix system which is included in Appendix C.

7.2 Assessment of Sources

The assessment of the available historical maps identifies that the site was not developed until 1979 when Estover Primary School was developed in the southwest of the site. The comprehensive school is identified to the north of the primary school from 1980 onwards.

Prior to the development of the school buildings, the site is identified as open fields with a tramway tunnel located 250m to the south of the southern site boundary pre-1867; the tunnel is noted as disused form 1951 onwards. Two surface air shafts are identified above the tunnel but are later obscured by residential development. The residential development advanced up to the site boundary in 1979 with an industrial area 50m to the southeast of the site developed in the same period.

There are no significant industries identified from the historical maps or from the data supplied as part of the Envirocheck report. Current trades are identified as comprising of builders merchants to the west, car mechanics to the south and north and ironworkers to the northeast. A petrol station, associated with a major supermarket, is located on the industrial estate adjacent to the southeast of the site. The nearest landfill is located 827m to the northwest of the site; intrusive data identifies the waste as general domestic. A waste transfer site is identified at the Hospital, located 900m to the northwest; the site is permitted to accept clinical, pharmaceutical and paper wastes.

The majority of potentially contaminative sources (Landfill and industrial estate) are located 400m to 900m from the site and are positioned beyond transport corridors that may potentially act as barriers to migration. The petrol station to the south is located down slope, and is topographically lower than the site. It is therefore unlikely that migration of any contaminants from these areas will impact on the site.

The site is underlain by a minor aquifer and there are tributaries of the River Plym 250m and 500m to the east and 150m to the west. There are a number of minor pollution incidents noted in the area surrounding the site although it is unlikely that they would impact the site due to their location on rivers downstream of the site or on public highways over 250m from the site.

7.3 Summary of Potential Sources

The risk to the site from the identified land use is considered to be low due to the absence of any significant industrial activity. However, with reference to guidelines presented in the Environment Agency publication "CLR 8: Potential Contaminants for the Assessment of Land" (2002), a list of possible contaminants that may be encountered on site are summarised in Table 7.4: -

7.4 **Potential Sources and Associated Contamination**

Land Use	Distance form site boundary	Potential Contaminants
Construction & demolition materials (e.g. Tunnel construction)	On site & Tunnel 240m south	General heavy metals and hydrocarbons.
Electricity Sub-Station	40m south & 80m northwest	Poly-chlorinated Bi-Phenyls (PCB)
Transport	Perimeter Roads	Heavy metals (cadmium, chromium, copper, lead, nickel, vanadium) asbestos, sulphate PAH, TPH

7.5 **Conclusion**

The site is located in a predominantly residential area and the site boundary is bounded by roadways on all sides; industrial areas are located to the south (supermarket) and 400m to the northeast (Industrial Estate). However, due to the absence of any significant, potentially contaminative, industrial processes it is considered that the likelihood of a significant source is low.

7.6 **Pathways for Migration**

It is considered that, assuming the presence of suitable sources, the potential pathways for migration of contamination include the following:

- Dermal contact and ingestion of contaminants within the made ground through direct contact to construction workers and end users;
- Aqueous migration of contaminants through the soil and bedrock to the minor aquifer.
- Deposition of airborne metal particulates from surrounding industries and road network.

However, as discussed previously in Section 7.2, the potential sources are predominantly located down gradient of the site or at a significant distance from the site. Therefore the likelihood of significant pathways being present that will impact upon the site is considered to be low.

7.7 **Assessment of Plausible Pollutant Linkages**

A conceptual model of the plausible pollutant linkages has been undertaken according to guidance outlined in current Environment Agency guidelines for contaminated land, as summarised in Section 6. A table summarising the identified pollutant linkages is provided in Table 7.7.1:

7.7.1 *Summary of identified plausible pollutant linkages*

Plausible Pollutant Linkages Assuming Current Conditions / Proposed Development					
Source	**Pathway**	**Receptor**	**Consequence**	**Probability**	**Risk**
Hazards to Human Health					
Heavy metals / hydrocarbons from airborne particulates and surface water run off	Dermal, ingestion and inhalation	Construction workers and end users	Low	Low	Low
Radon	Soils	End Users	Medium	Likely	Moderate
Hazards to the Water Environment					
None anticipated	Surface water infiltration and groundwater	Minor aquifer	Low	Low	Very Low
Hazards to Flora and Fauna					
None Anticipated	Flora uptake Fauna ingestion	Flora & Fauna	Low	Low	Very Low
Hazards to Building Fabric, Structures and Services					
Sulphates	Direct Contact	Building structure / foundations	Minor	Unlikely	Very Low

7.7.2 *End Users*

The previous ground investigation did not identify any elevated concentrations of tested determinands. Although no testing was undertaken during the recent investigation, there are no significant contaminative industries that have been identified from historical mapping and the site is predominantly surrounded by residential development and roads. It is therefore considered that a significant source is not likely to be present and therefore the risk to end users is very low.

7.7.3 *Water Environment*

The site is identified as being underlain by a minor aquifer with high leachability soils. However, a significant source has not been identified and there appears to be no potentially contaminative areas on the site itself. Therefore it is considered that the threat to the water environment is very low.

7.7.4 *Building Structures*

Substances that can be involved in chemical attack on building material include sulphates and general contaminants within the made ground. The intrusive investigation undertaken at the overflow car park has not identified any contamination. However, there is a potential for sulphate minerals to be present within the slate and dolerite bedrock which may present a low risk to concrete foundations.

An assessment of radon risk to the site has identified the likely presence of radon. However, basic protection measures can be implemented into the new development to mitigate the risk.

Considering the potential for the presence of sulphates and the risk of radon gas, it is considered that the risk to structures is medium to low.

7.8 Conclusions

The information collected from desk study material and intrusive investigations, and assessed in this section of the report, indicates that the overall preliminary environmental risk to the site is considered to be low.

8 Conclusions & Recommendations

8.1 General

The site is situated to the northeast of Plymouth City centre and approximately 700m southeast of Plymouth Airport. The site is bounded by roads on all sides of the college campus with Miller Way to the west, Leypark Drive to the south, Leypark Walk to the east and Donner Road to the north. There are no water courses on the site itself and the nearest water bodies (tributaries of the River Plym) are located 148m to the northwest and 250m to the east.

The analysis of the available historical maps has not identified any significant industrial activities or potentially contaminative land uses on or surrounding the site. The site itself was not developed prior to the development of the present primary school and comprehensive school. The primary school first appears on the 1971 map while the comprehensive school is first identified on the 1992 map.

The ground conditions have been identified as generally comprising made ground or topsoil underlain by slightly sandy clay, slightly clayey gravel and mudstone/slate. Basalt was identified in one location in the south of the site. The bedrock was encountered at depths of 0.6m bgl to 2.3m bgl and was proven to the base of all holes to a maximum depth of 4.5m. No groundwater was identified during the works before the use of water flush.

8.2 Recommendations

The following recommendations are based on the findings of the desk study and previous / current intrusive investigations as summarised in this report:

- With reference to available reference material from the NRPB and BRE, it is recommended that basic radon protection measures are implemented for new developments.
- It is anticipated that the majority of the site will be underlain by shale/mudstone bedrock. However, it is likely that igneous intrusions may be encountered which will be more difficult to excavate. It is not possible to identify areas of possible intrusions due to the absence of distinguishable surface features and the limited scope of the current investigation.
- Using in-situ SPT testing and published correlations from Tomlinson "Principles of Foundation Design" (2001) it is anticipated that a presumed net bearing pressure of 250 kN/m^2 will be achievable within the bedrock.
- It is anticipated, using available information, that shallow strip foundations could be utilised, founding on the bedrock at a depth of 1.0m bgl to 1.5m bgl.
- Using laboratory data from the location of the overflow car park, the soils were classified as low volume change potential. Furthermore, shallow thicknesses of made ground were identified across the site at generally <0.6m. It is therefore considered that a ground bearing slab should be suitable across the site.
- Soakaway testing, undertaken in the overflow car park, indicates a design permeability of 2.4×10^{-5} m/s, within the gravel. It should be noted that soakaway testing has not been undertaken over the majority of the site.
- Waste Acceptance Criteria testing, undertaken on soils taken from the overflow car park, indicates that the shallow made ground soils could be classified as inert. However, it has been noted that tarmacdam was present in the samples and this would result in the soils possibly being classified as non-hazardous. It is therefore recommended that, if soils are to be removed from site, the material is sorted. This will remove the tarmac constituents and reduce the amount of material that would need to be classified as non-hazardous.

- It should be noted that the above classification is based on a limited number of results taken from the north of the Estover campus. It is therefore recommended that, if material is to be removed from site, it is tested to ensure compliance with the above classification.

8.3 **Environmental Risk**

The available geochemical data does not indicate any elevated concentrations of determinands when compared to adjusted Dutch Intervention Values and published soil guideline and toxicology data available as part of the Environment Agency/DEFRA CLEA model.

Environmental data from the Envirocheck report, comprising of historical plans and records of pollution incidents and historic/current trades has not identified any potential significant sources in the area surrounding the site. The site itself has no evidence of development prior to the construction of the existing buildings and the surrounding area is predominantly comprised of residential developments together with a supermarket and nearby industrial estate.

An environmental risk assessment has been carried out using the available data and it is considered that there is a very low risk to human health and controlled waters due to the apparent absence of a significant source. However, only a very small percentage of the site has been geo-chemically tested and it cannot be confirmed that the site as a whole is free from contamination without further representative testing.

The development is planned to comprise of school buildings with internal courtyards and associated landscaping. The majority of the development will comprise of hard standing (ground slab/internal areas, car parking and paved areas) with adjacent sports pitches. The area of proposed development partially comprises of current sports fields and partially of existing school buildings. Therefore, the soils will not be accessible to end users due to there presence beneath the proposed development; the remaining soils will be exposed but the end use will remain unchanged as sports fields.

Taking into account the apparent absence of a source and the nature of the development described above; it is considered that the overall environmental risk to the site is low.

Envirocheck® Report: Datasheet

Order Details:

Order Number:
21330175_1_1

Customer Reference:
Estover College

National Grid Reference:
250980, 58920

Sheet:
A

Site Area (Ha):
14.81

Search Buffer (m):
1000

Site Details:

Estover Community College
Miller Way
PLYMOUTH
PL6 8UN

Client Details:

Mr C Edwards
Faber Maunsell
Bush House
Prince Street
Bristol
BS1 4QD

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v25.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			1	3
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 2				2
Local Authority Integrated Pollution Prevention And Control	pg 2				1
Local Authority Pollution Prevention and Controls	pg 2				2
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2		Yes		
Pollution Incidents to Controlled Waters	pg 2			9	15
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances	pg 6				6
River Quality	pg 7				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 8			3	3 (*21)
Water Industry Act Referrals	pg 14				2
Groundwater Vulnerability	pg 15	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites	pg 16				1
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 16				2
Registered Waste Treatment or Disposal Sites					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS Recorded Mineral Sites					
BGS 1:625,000 Solid Geology	pg 17	Yes	n/a	n/a	n/a
Brine Compensation Areas			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Natural and Mining Cavities					
Potential for Collapsible Ground Stability Hazards				n/a	n/a
Potential for Compressible Ground Stability Hazards			Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards		Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards			Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards			Yes	n/a	n/a
Radon Affected Areas	pg 17	Yes	n/a	n/a	n/a
Radon Protection Measures	pg 18	Yes	n/a	n/a	n/a
Shallow Mining Hazards	pg 18	Yes		n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 19		4	2	28
Fuel Station Entries	pg 22		1		1

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 23			2	1
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 23				1
Special Areas of Conservation					
Special Protection Areas					

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Plymouth City Council Property Type: Recreational & Cultural Location: Derriford Road Science Park, Plymouth, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Plym, Cornwall Reference: Nra-Sw-6450 Permit Version: 1 Effective Date: 8th March 1994 Issued Date: 8th March 1994 Revocation Date: Not Supplied Discharge Type: Miscellaneous Discharges - Mine / Groundwater As Raised Discharge Environment: Unknown Receiving Water: Not Supplied **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	498	1	250430 59340
2	**Discharge Consents** Operator: South West Water Property Type: Sewerage Network - Pumping Station - Water Company Location: Mainstore 1 Pseo, Ramage Road, Plymouth, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Plym, Cornwall Reference: 301536 Permit Version: 1 Effective Date: 1st October 2000 Issued Date: 1st October 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Stream (S) **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	618	1	251814 58943
3	**Discharge Consents** Operator: Total Uk Ltd Property Type: Wholesale Distribution Fuels & Metals Location: Landmark Service Station Forder Valley Road, Estover, Plymouth, Devon, Pl6 8le Authority: Environment Agency, South West Region Catchment Area: Tidal Plym, Cornwall Reference: 302954 Permit Version: 1 Effective Date: 11th February 2004 Issued Date: 12th February 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Forder Valley Stream **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A3NW (S)	655	1	250760 58010
4	**Discharge Consents** Operator: Mr A N Strachan Property Type: Wooden Containers Location: Site At Forder Battery, Fort Austin Avenue, Crownhill, PLYMOUTH, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Plym, Cornwall Reference: NRA-SW-6338/1 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 21st January 1994 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Treated Effluent Discharge Environment: Land/Soakaway Receiving Water: Licence Status: Lapsed, Revoked Or Cancelled **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A2NW (SW)	830	1	250150 58200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Integrated Pollution Prevention And Control** Name: Silicon Sensing Products Uk Ltd Location: Silicon Sensing Products, Unit 18, Eastover Road,,, PLYMOUTH, PL6 7PY Authority: Environment Agency, South West Region Permit Reference: Qp3037sk Original Permit Ref: Bv0783il Effective Date: 28th September 2005 **Status: Surrender Effective** Application Type: Surrender App. Sub Type: Whole Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (H) Activity Description: Inorganic Chemicals; Using Hydrogen Fluoride/Chloride Etc If Release To Air (Other Than Chemicals Manufacture Etc) Primary Activity: Y	A19SE (NE)	824	1	251724 59669
5	**Integrated Pollution Prevention And Control** Name: Silicon Sensing Products Uk Ltd Location: Silicon Sensing Products, Unit 18, Eastover Road, Plymouth, PL6 7PY Authority: Environment Agency, South West Region Permit Reference: Bv0783il Original Permit Ref: Bv0783ll Effective Date: 17th October 2003 **Status: Superseded By Variation** Application Type: Application App. Sub Type: New Positional Accuracy: Automatically positioned to the address Activity Code: 4.2 A(1) (H) Activity Description: Inorganic Chemicals; Using Hydrogen Fluoride/Chloride Etc If Release To Air (Other Than Chemicals Manufacture Etc) Primary Activity: Y	A19SE (NE)	824	1	251724 59669
6	**Local Authority Integrated Pollution Prevention And Control** Name: Fine Tubes Location: 175 Plymbridge Road, Estover, Plymouth, Pl6 7lg Authority: Plymouth City Council, Environmental Health Department Permit Reference: Not Supplied Dated: 17th November 2004 Process Type: Production and Processing of Metals Description: SG6(04) Degreasing of metal **Status: Permit Issued** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	844	2	251179 60026
7	**Local Authority Pollution Prevention and Controls** Name: Barden Crop Location: Plymbridge Road, Estover, Plymouth, Pl6 7lh Authority: Plymouth City Council, Environmental Health Department Permit Reference: Not Supplied Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/45 Surface cleaning **Status: Application Not Yet Authorised** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	780	2	251472 59825
8	**Local Authority Pollution Prevention and Controls** Name: Fine Tubes Location: 175 Plymbridge Road, Estover, Plymouth, PL6 7LG Authority: Plymouth City Council, Environmental Health Department Permit Reference: Not Supplied Dated: 17th November 2004 Process Type: Local Authority Pollution Prevention and Control Description: PG4/1 Processes for the surface treatment of metals **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A18NE (N)	962	2	251269 60127
	Nearest Surface Water Feature	A13SW (NW)	148	-	250693 59106
9	**Pollution Incidents to Controlled Waters** Property Type: Acid Processes Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Poor/Inadequate Maintenance Incident Date: 5th March 1991 Incident Reference: 51001781 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	284	1	251300 59300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Crude Sewage Note: Accidental Spillage/Leakage Incident Date: 10th December 1992 Incident Reference: 62005412 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	291	1	250500 59000
11	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 2nd August 1993 Incident Reference: 62010359 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	308	1	251100 58400
12	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Crude Sewage Note: Poor/Inadequate Maintenance Incident Date: 30th May 1991 Incident Reference: 51001860 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SW (S)	362	1	250800 58300
13	**Pollution Incidents to Controlled Waters** Property Type: Cattle Manure (Solids) Store Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animal Waste/Slurry Note: Poor Management Control Incident Date: 5th May 1992 Incident Reference: 62004467 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	370	1	250500 58500
13	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 26th July 1993 Incident Reference: 62005834 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	373	1	250500 58495
14	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Sewage Note: Not Supplied Incident Date: 23rd June 1992 Incident Reference: 62004598 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (SE)	372	1	251200 58400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Chemicals Note: Weather Incident Date: 13th September 1992 Incident Reference: 62004647 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Act Of God Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	437	1	251500 59350
16	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animals Note: Not Supplied Incident Date: 9th February 1993 Incident Reference: 62005466 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	441	1	250600 58300
17	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Sewerage Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Crude Sewage Note: Poor Management Control Incident Date: 4th June 1991 Incident Reference: 51001868 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Act Of God Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	507	1	250490 59430
18	**Pollution Incidents to Controlled Waters** Property Type: Other Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Note: Accidental Spillage/Leakage Incident Date: 9th October 1992 Incident Reference: 62005181 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Cause Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	510	1	250400 58400
19	**Pollution Incidents to Controlled Waters** Property Type: Other Sewer Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 24th February 1994 Incident Reference: 62005974 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SW (SW)	592	1	250300 58400
19	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Sewerage Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Crude Sewage Note: Accidental Spillage/Leakage Incident Date: 2nd July 1990 Incident Reference: 51001489 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Collapse Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SW (SW)	595	1	250300 58395

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 25th May 1993 Incident Reference: 62005764 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	615	1	251600 59500
21	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Sewerage Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Crude Sewage Note: Accidental Spillage/Leakage Incident Date: 4th January 1993 Incident Reference: 62005375 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Overflow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	634	1	250600 59700
22	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Trade Effluent Note: Deliberate Act Incident Date: 19th April 1992 Incident Reference: 62004387 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Deliberate Action Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A2NE (SW)	683	1	250350 58200
23	**Pollution Incidents to Controlled Waters** Property Type: Landfill/Waste Disposal Site Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animal Waste/Slurry Note: Miscellaneous/Other Pollution Type Incident Date: 25th July 1991 Incident Reference: 62005005 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	706	1	251800 58500
24	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 5th August 1991 Incident Reference: 62005016 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A3SW (S)	774	1	250700 57900
25	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Storm Overflow Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Sewage Note: Not Supplied Incident Date: 4th April 1995 Incident Reference: 62015567 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	814	1	251800 58300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 5th November 1993 Incident Reference: 62010671 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (NE)	823	1	251800 59595
26	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Sewage Note: Not Supplied Incident Date: 11th January 1996 Incident Reference: 62016903 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (NE)	826	1	251800 59600
27	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Chemicals Note: Poor Management Control Incident Date: 7th March 1995 Incident Reference: 62009209 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Deliberate Action Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	856	1	250500 59900
28	**Pollution Incidents to Controlled Waters** Property Type: Surface Water Sewers Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Sewage Note: Accidental Spillage/Leakage Incident Date: 26th October 1992 Incident Reference: 62005194 Catchment Area: Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15NW (NE)	928	1	252000 59500
29	**Pollution Incidents to Controlled Waters** Property Type: Road Construction/Maintenance Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Quarry/Extraction Water Note: Poor Operational Practise Incident Date: 7th November 1990 Incident Reference: 62003199 Catchment Area: Tidal Plym, Cornwall Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A3SW (S)	956	1	250850 57700
30	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Research Way, Derriford, Plymouth, Pl6 6bu Authority: Environment Agency, South West Region Permit Reference: BF4326 Dated: 30th March 1999 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation superseded by a substantial or non substantial variation|Superseded** Positional Accuracy: Manually positioned to the address or location	A12NW (NW)	808	1	250204 59555

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Tamar Science Park, Research Way, Derriford, Plymouth, Devon, PL6 8BU Authority: Environment Agency, South West Region Permit Reference: Bs8800 Dated: 26th November 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variation|Superseded** Positional Accuracy: Automatically positioned to the address	A12NW (NW)	826	1	250195 59573
30	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Tamar Science Park, Research Way, Derriford, Plymouth, Devon, PL6 8BU Authority: Environment Agency, South West Region Permit Reference: Bs7161 Dated: 27th November 2002 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation superseded by a substantial or non substantial variation|Superseded** Positional Accuracy: Automatically positioned to the address	A12NW (NW)	826	1	250195 59573
30	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Research Way, Derriford, Plymouth, Pl6 8bu Authority: Environment Agency, South West Region Permit Reference: BE9357 Dated: 20th April 1999 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variation|Superseded** Positional Accuracy: Manually positioned to the address or location	A12NW (NW)	826	1	250194 59572
30	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Research Way, Derriford, Plymouth, Pl6 8bu Authority: Environment Agency, South West Region Permit Reference: By2332 Dated: 23rd September 2004 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA **Status: Application has been authorised and any conditions apply to the operator|Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A17SW (NW)	830	1	250222 59613
31	**Registered Radioactive Substances** Name: University Of Plymouth Location: Peninsula Medical School, Research Way, Derriford, Plymouth, Pl6 8bu Authority: Environment Agency, South West Region Permit Reference: By2359 Dated: 25th September 2004 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Substantial variation to a registration under the Act of an open source which is also the subject of an authorisation **Status: Application has been authorised and any conditions apply to the operator|Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A17SW (NW)	841	1	250214 59621
	River Quality Name: Plym GQA Grade: River Quality A Reach: Plym Bridge-Normal Tidal Limit Estimated Distance (km): 2.1 Flow Rate: Flow less than 5 cumecs Flow Type: River Year: 2000	A9SE (SE)	893	1	251967 58415

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	**Water Abstractions** Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002G013 Permit Version: Not Supplied Location: Mainstone Farm , PLYMPTON Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 1.90 Yearly Rate (m3): 727.00 Details: Depth 6M Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	259	1	251400 58700
33	**Water Abstractions** Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002G019 Permit Version: Not Supplied Location: Leigham Manor, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 1.10 Yearly Rate (m3): 256.00 Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	395	1	251500 58600
33	**Water Abstractions** Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002G019 Permit Version: Not Supplied Location: Leigham Manor, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supplies (Domestic) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 6.00 Yearly Rate (m3): 1790.00 Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	398	1	251500 58595
34	**Water Abstractions** Operator: The Wrigley Co Ltd Licence Number: Unknown Licence Number Permit Version: Not Supplied Location: Premises Of The Wrigley Company, Estover, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Miscellaneous Water Bottling) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 227 Yearly Rate (m3): 80000 Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NE (NE)	685	1	251700 59500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**Water Abstractions** Operator: THE WRIGLEY CO LTD Licence Number: 1547002G039 Permit Version: Not Supplied Location: Premises Of, The Wrigley Company, Estover, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Food And Drink) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 227.30 Yearly Rate (m3): 80000.00 Details: Depth 107m C Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NE (NE)	685	1	251705 59495
34	**Water Abstractions** Operator: Wrigley Co Ltd Licence Number: 15/47/002/G/039 Permit Version: 100 Location: Wrigley Company, Plymouth - Borehole Authority: Environment Agency, South West Region Abstraction: Food And Drink: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises Of The Wrigley Company, Estover, Plymouth Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 6th December 1985 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NE (NE)	685	1	251700 59500
	Water Abstractions Operator: PLYMOUTH HOSPITALS NHS TRUST, ; PLYMOUTH HOSPITALS NHS TRUST Licence Number: 1547002G045 Permit Version: Not Supplied Location: Derriford Hospital, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Schools/Charities/Sports Etc) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 222.00 Yearly Rate (m3): 81030.00 Details: Borehole Depth: 145; Expires 06.06.2003 Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NE (W)	1009	1	249855 59345
	Water Abstractions Operator: PLYMOUTH HOSPITALS NHS TRUST, ; PLYMOUTH HOSPITALS NHS TRUST Licence Number: 1547002G045 Permit Version: Not Supplied Location: Derriford Hospital, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Schools/Charities/Sports Etc) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 192.00 Yearly Rate (m3): 70080.00 Details: Borehole Depth: 145 Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NE (W)	1013	1	249850 59345

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: PLYMOUTH HOSPITALS NHS TRUST, ; PLYMOUTH HOSPITALS NHS TRUST Licence Number: 1547002G045 Permit Version: Not Supplied Location: Derriford Hospital, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Schools/Charities/Sports Etc) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 414.00 Yearly Rate (m3): 151110.00 Details: Borehole Depth: 145 Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NE (W)	1015	1	249850 59350
	Water Abstractions Operator: Plymouth Hospitals Nhs Trust Licence Number: 15/47/002/G/051 Permit Version: 101 Location: Borehole At Derriford Hospital Authority: Environment Agency, South West Region Abstraction: Hospitals: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Derriford Hospital, Plymouth Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 29th April 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NE (W)	1015	1	249850 59350
	Water Abstractions Operator: Plymouth Garden Centre Licence Number: 15/47/002/G/037 Permit Version: 100 Location: Two Boreholes At Plymouth Garden Centre Authority: Environment Agency, South West Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Plymouth Garden Centre, Plymouth Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th June 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A6SW (SW)	1270	1	249600 58300
	Water Abstractions Operator: Plymouth Garden Centre Ltd Licence Number: 15/47/002/G/037 Permit Version: 100 Location: Two Boreholes At Plymouth Garden Centre Authority: Environment Agency, South West Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Plymouth Garden Centre, Plymouth Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th June 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A6SW (SW)	1270	1	249600 58300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: ENGLISH CHINA CLAYS Licence Number: 1547002S009 Permit Version: Not Supplied Location: Lee Moor Wks (E C C I) &, Watts Blake Bearne Works, Headon Cornwood, SHAUGH PRIOR, Devon Authority: Environment Agency, South West Region Abstraction: Industrial Cooling (Quarrying) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 6128.10 Yearly Rate (m3): 2236668.00 Details: River Plym At Marsh Mills; HC Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1303	1	251700 57605
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002S021 Permit Version: Not Supplied Location: Premises Of E C L P, Marsh Mills Authority: Environment Agency, South West Region Abstraction: Industrial Cooling (Miscellaneous) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 6128.10 Yearly Rate (m3): 2200000.00 Details: River Plym Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1306	1	251705 57605
	Water Abstractions Operator: Imerys Minerals Ltd Licence Number: 15/47/002/S/009 Permit Version: 102 Location: Lee Moor Works (Ecci) - River Plym At Marsh Mills Authority: Environment Agency, South West Region Abstraction: Extractive: Process water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 25167 Yearly Rate (m3): 6629340 Details: Lee Moor Works Of Ecci Plus Headon - Cornwood And Shaugh Works Of Watts Blake Bearne & Co. Ltd. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 20th February 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1307	1	251700 57600
	Water Abstractions Operator: Imerys Minerals Ltd Licence Number: 15/47/002/S/009 Permit Version: 101 Location: Lee Moor Works (Eccl) - River Plym At Marsh Mills Authority: Environment Agency, South West Region Abstraction: Extractive: Process water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lee Moor Works Of Eccl Plus Headon - Cornwood And Shaugh Works Of Watts Blake Bearne & Co. Ltd. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1307	1	251700 57600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: ENGLISH CHINA CLAYS Licence Number: 1547002S009 Permit Version: Not Supplied Location: Lee Moor Works (E C C I) &, Watts Blake Bearne Works, Headon Cornwood, SHAUGH PRIOR, Devon Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Quarrying) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 25167.10 Yearly Rate (m3): 6629340.00 Details: River Plym At Marsh Mills; HC Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1310	1	251705 57600
	Water Abstractions Operator: ENGLISH CHINA CLAYS Licence Number: 1547002S009 Permit Version: Not Supplied Location: Lee Moor Works &, Watts Blake Bearne Works, At Headon Cornwood; &, SHAUGH Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Quarrying) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 25336.40 Yearly Rate (m3): 6628436.00 Details: River Plym Via Ditsworthy Lt; Hc Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1314	1	251705 57595
	Water Abstractions Operator: Tecalemit Systems Ltd Licence Number: 15/47/002/S/010 Permit Version: 100 Location: Tecalemit Systems Ltd. - R Plym Authority: Environment Agency, South West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises Of Tecalemit, Systems Ltd, Longbridge Road, Marsh Mills, Plymouth Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th May 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1528	1	251800 57400
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002S022 Permit Version: Not Supplied Location: Lands At Plymouth And, PLYMPTON ST MARY Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 45.50 Yearly Rate (m3): 2273.00 Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20NW (NE)	1534	1	252200 60195

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 1547002S022 Permit Version: Not Supplied Location: Lands At Plymouth And, PLYMPTON ST MARY Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 10000.00 Yearly Rate (m3): 500000.00 Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20NW (NE)	1537	1	252200 60200
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 47.70 Yearly Rate (m3): 15754.00 Details: Staff Welfare; Depth 71M Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1913	1	251700 56905
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Industrial Processing (Miscellaneous) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 143.20 Yearly Rate (m3): 49955.00 Details: Borehole Depth :55; 0020m0004500g Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1915	1	251705 56905
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Miscellaneous Water Bottling) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 6.80 Yearly Rate (m3): 2250.00 Details: Borehole Depth :55; 0020m0004500g Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1918	1	251700 56900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Private Water Supply (Miscellaneous Water Bottling) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 20.50 Yearly Rate (m3): 7137.00 Details: Borehole Depth :55; 0020m0004500g Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1920	1	251705 56900
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Industrial Cooling (Miscellaneous) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 81.80 Yearly Rate (m3): 27007.00 Details: Staff Welfare; Depth 71M Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1923	1	251700 56895
	Water Abstractions Operator: SIEBE SERVICES LIMITED Licence Number: 1547002G027 Permit Version: Not Supplied Location: Prems Of, Siebe Services Ltd, Marsh Mills, PLYMOUTH Authority: Environment Agency, South West Region Abstraction: Industrial Cooling (Miscellaneous) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 245.50 Yearly Rate (m3): 85636.00 Details: Staff Welfare; Depth 71M Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1925	1	251705 56895
35	**Water Industry Act Referrals** Name: Stafford Miller Ltd Location: Thornbury Road, Estover Industrial Estate, PLYMOUTH, Devon, PL6 7PW Authority: Environment Agency, South West Region Permit Reference: AP3282 Dated: 5th December 1994 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations **Status: Application received by the EA but is not yet authorised|Not Yet Authorised** Positional Accuracy: Automatically positioned to the address	A18SE (N)	508	1	251156 59686
35	**Water Industry Act Referrals** Name: Stafford Miller Ltd Location: Thornbury Road, PLYMOUTH, Devon, PL6 7PW Authority: Environment Agency, South West Region Permit Reference: AG3720 Dated: 3rd September 1992 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations **Status: Application received by the EA but is not yet authorised|Not Yet Authorised** Positional Accuracy: Automatically positioned to the address	A18SE (N)	512	1	251156 59691

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 49 South Devon Scale: 1:100,000	A7NE (W)	0	1	250468 58898
	Drift Deposits None				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Plymouth City Unitary Council - Has supplied landfill data		0	2	252280 59345
36	**Local Authority Recorded Landfill Sites** Location: Derriford, Plymouth Reference: 7/19 Authority: Plymouth City Council, Environmental Health Department **Last Reported Status: Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A17SE (NW)	827	2	250405 59822
37	**Registered Waste Transfer Sites** Licence Holder: Plymouth Hospitals Nhs Trust Licence Reference: WR/L/TC/W(76) 06.93 Site Location: Derriford Hospital, Derriford Road, PLYMOUTH, Devon, PL6 8BH Operator Location: Moriaix Drive, Derriford, PLYMOUTH, Devon, PL6 5DD Authority: Environment Agency - South West Region, Devon Area Site Category: Transfer Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrendered|Cancelled Dated: 18th June 1993 Preceded By Licence: Not Given Superseded By Licence: L/Ts/W(100) 06.96 Positional Accuracy: Positioned by the supplier Boundary Quality: Good Authorised Waste: Clin.Waste Hsc'92 Grps Aa,B,C,B,C,D,E Confidential Paper Ex Med.Estabs Max.Throughput In Licence Prohibited Waste: Waste N.O.S.	A12NW (NW)	869	1	250082 59491
38	**Registered Waste Transfer Sites** Licence Holder: Viridor Waste Disposal Ltd Licence Reference: L/Ts/W(100) 06.96 Site Location: Derriford Hospital Incinerator, Derriford Road, PLYMOUTH, Devon, PL6 5DD Operator Location: Great Western House, Station Approach, TAUNTON, Somerset, TA1 1QW Authority: Environment Agency - South West Region, Cornwall Area Site Category: Transfer Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is known|Operational Dated: 21st June 1996 Preceded By Licence: WR/L/TC/W(76) 06.93 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Clinical Grps A,B,C,D,E In Hsc '92 Confidential Papers Controlled Drugs Manuf.Waste Assoc.With Above Wastes Max.Waste Permitted By Licence Paper/Cardboard Assoc.With Above Waste Pharmaceutical Wastes Pornographic Material Environment Agency must give specific authorisation for this waste to be accepted|Waste requires prior approval: Spec.Waste (Epa'90:S62/1996 Regs)	A12NW (NW)	895	1	250070 59520

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Upper Old Red Sandstone and Upper Devonian	(S)	0	3	250430 56653
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Potential for Collapsible Ground Stability Hazards No Hazard				
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	0	3	250800 59150
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250825 59200
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250800 59150
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	0	3	250800 59150
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250800 59150
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (N)	101	3	250875 59250
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	105	3	250850 59225
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	106	3	250825 59200
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	0	3	250800 59150
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250825 59200
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250800 59150
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	0	3	250800 59150
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250825 59200
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	89	3	250800 59150
	Radon Affected Areas Description: Between 5% and 10% of homes are above the Action Level Source: Health Protection Agency	A13SW (N)	0	4	250978 59000
	Radon Affected Areas Description: Between 5% and 10% of homes are above the Action Level Source: Health Protection Agency	A8NE (E)	0	4	251000 58918
	Radon Affected Areas Description: Between 5% and 10% of homes are above the Action Level Source: Health Protection Agency	A13SE (N)	0	4	251000 59000

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Affected Areas Description: Between 3% and 5% of homes are above the Action Level Source: Health Protection Agency	A8NE (E)	0	4	251000 58918
	Radon Protection Measures Type: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A7NW (W)	0	3	250000 58918
	Shallow Mining Hazards Risk: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	0	3	250503 58852

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**Contemporary Trade Directory Entries** Name: Albion Car Sales Location: Leypark Dr, Plymouth, Devon, PL6 8UD Classification: Car Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (SE)	54	-	251138 58748
40	**Contemporary Trade Directory Entries** Name: A 3 Hours W R S Materials Direct Location: 11, Wasdale Gardens, Plymouth, PL6 8TN Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (W)	69	-	250705 58625
41	**Contemporary Trade Directory Entries** Name: Sargeants Freezer Meat Location: 76, Keswick Crescent, Plymouth, Devon, PL6 8TS Classification: Meat - Wholesale **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	189	-	250615 58674
42	**Contemporary Trade Directory Entries** Name: Douglas Fitters Location: 10, Long Down Gardens, Plymouth, PL6 8SB Classification: Wrought Ironwork **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (NE)	221	-	251355 59190
43	**Contemporary Trade Directory Entries** Name: Beeline Services Location: 31, Pattinson Drive, Plymouth, PL6 8RU Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (E)	272	-	251461 58848
44	**Contemporary Trade Directory Entries** Name: Master Mek Location: 51, Burwell Close, Plymouth, Devon, PL6 8QD Classification: Car Engine Tuning & Diagnostic Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	415	-	251099 59606
45	**Contemporary Trade Directory Entries** Name: Stafford Miller Ltd Location: Tamar House, Thornbury Road, Plymouth, PL6 7PW Classification: Pharmaceutical Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	512	-	251156 59691
46	**Contemporary Trade Directory Entries** Name: South West Watercoolers Location: Iynher HouseBush Pk, Plymouth, Devon, PL6 7RG Classification: Water Coolers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NE)	516	-	251654 59274
47	**Contemporary Trade Directory Entries** Name: 1st Call Car Recovery Location: 18, Combley Drive, Plymouth, PL6 8JW Classification: Car Breakdown & Recovery Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SW (N)	561	-	250960 59762
48	**Contemporary Trade Directory Entries** Name: Research International Ltd Location: 1, Bush Park, Plymouth, PL6 7RG Classification: Printed Circuit Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (NE)	610	-	251747 59298
49	**Contemporary Trade Directory Entries** Name: J M Location: Shell Cl, Plymouth, Devon, PL6 8NU Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A3NE (SE)	620	-	251315 58170
50	**Contemporary Trade Directory Entries** Name: Landmark Filling Station Location: Forder Valley Road, Plymouth, PL6 8LE Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A3NW (S)	645	-	250739 58023

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**Contemporary Trade Directory Entries** Name: Cooper Standard Automotive (Uk) Ltd Location: Estover Road, Plymouth, PL6 7PS Classification: Lubricating Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	738	-	251646 59621
52	**Contemporary Trade Directory Entries** Name: Ryford Ltd Location: Plymbridge Road, Estover, Plymouth, PL6 7JS Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	752	-	251486 59777
52	**Contemporary Trade Directory Entries** Name: Barden Corporation Uk Ltd Location: Plymbridge Road, Estover, Plymouth, PL6 7LH Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	781	-	251474 59825
53	**Contemporary Trade Directory Entries** Name: The Wrigley Co Ltd Location: Estover Road, Plymouth, PL6 7PR Classification: Confectionery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (NE)	785	-	251860 59455
54	**Contemporary Trade Directory Entries** Name: The Tamar Surgery Healthport Location: Research Way, Derriford, Plymouth, Devon, PL6 8BU Classification: Hospitals **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A12NW (NW)	802	-	250231 59580
55	**Contemporary Trade Directory Entries** Name: Merlin Systems Corporation Ltd Location: Innovation & Technology Transfer Centre, Tamar Science Park, Davy Road, PLYMOUTH, PL6 8BX Classification: Automation Systems & Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	816	-	250276 59654
56	**Contemporary Trade Directory Entries** Name: Gleason Cutting Tools Ltd Location: Plymbridge Road, Estover, Plymouth, PL6 7LQ Classification: Tool Design, Manufacturers & Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (N)	851	-	251333 59987
57	**Contemporary Trade Directory Entries** Name: Car Crazy Ltd Location: Austin Cr, Plymouth, Devon, PL6 5QA Classification: Car Dealers - Used **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A2NE (SW)	851	-	250326 57993
57	**Contemporary Trade Directory Entries** Name: Carspect Uk Ltd Location: 6, Austin Crescent, Plymouth, PL6 5QA Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A2NE (SW)	873	-	250324 57967
57	**Contemporary Trade Directory Entries** Name: Warleigh Hall Location: 6, Austin Crescent, Plymouth, PL6 5QA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A2NE (SW)	873	-	250324 57967
58	**Contemporary Trade Directory Entries** Name: R C S Location: Unit 1,Phoenix Business Park,Estover Rd, Plymouth, Devon, PL6 7PY Classification: Machinery - Industrial & Commercial **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	854	-	251644 59766

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
58	**Contemporary Trade Directory Entries** Name: Bunzl Cleaning & Hygiene Supplies Location: Unit 3, Phoenix Business Park, Estover Road, Plymouth, PL6 7PY Classification: Cleaning Materials & Equipment **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	855	-	251645 59767
58	**Contemporary Trade Directory Entries** Name: P W Convertions Location: Unit 5/7, Phoenix Business Park, Estover Road, Plymouth, Devon, PL6 7PY Classification: Commercial Vehicle Bodybuilders & Repairers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	855	-	251645 59767
58	**Contemporary Trade Directory Entries** Name: Bluesky Technology Uk Ltd Location: Unit 1, Phoenix Business Park, Estover Road, Plymouth, PL6 7PY Classification: Electronic Engineers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	855	-	251645 59767
59	**Contemporary Trade Directory Entries** Name: N B N International Location: Plymbridge House, Estover Road, Plymouth, PL6 7PY Classification: Distribution Services **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	865	-	251595 59833
59	**Contemporary Trade Directory Entries** Name: Hitchings & Mason Ltd Location: Estover Rd, Plymouth, Devon, PL6 7PY Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19SE (NE)	903	-	251667 59814
59	**Contemporary Trade Directory Entries** Name: Olympia Food Products Location: Estover Rd, Plymouth, Devon, PL6 7PY Classification: Distribution Services **Status:** **Active** Positional Accuracy: Manually positioned to the road within the address or location	A19SW (NE)	905	-	251637 59848
59	**Contemporary Trade Directory Entries** Name: Latimer Trend Printing Group Location: Estover Road, Plymouth, PL6 7PY Classification: Printers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	944	-	251670 59870
60	**Contemporary Trade Directory Entries** Name: Frontline Image Ltd Location: Estover Rd, Plymouth, Devon, PL6 7PY Classification: Screen Process Printers **Status:** **Active** Positional Accuracy: Manually positioned to the road within the address or location	A19SE (NE)	881	-	251760 59712
60	**Contemporary Trade Directory Entries** Name: Ideal Food Location: Unit 3, Novacold, Estover Road, Plymouth, PL6 7PF Classification: Frozen Food Processors & Distributors **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	917	-	251758 59760
61	**Contemporary Trade Directory Entries** Name: A C Haines Engineering Ltd Location: Estover Road, Plymouth, PL6 7PY Classification: Precision Engineers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	936	-	251596 59926
62	**Contemporary Trade Directory Entries** Name: Fine Tubes Ltd Location: Plymbridge Road, Estover, Plymouth, PL6 7LG Classification: Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	964	-	251269 60129

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	**Fuel Station Entries** Name: Asda Plymouth Automat Location: Miller Way, Estover District Centre, PLYMOUTH, Devon, PL6 8TB Brand: ASDA Premises Type: Hypermarket **Status:** **Open** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	57	-	250987 58679
64	**Fuel Station Entries** Name: Tcs Landmark Location: Forder Valley Road, Leigham, PLYMOUTH, Devon, PL6 8LE Brand: Total Premises Type: Petrol Station **Status:** **Open** Positional Accuracy: Automatically positioned to the address	A3NW (S)	645	-	250739 58023

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	**Local Nature Reserves** Name: Forder Valley Multiple Area: Y Area (m2): 138279.54 Source: Plymouth City Council Designation Date: Not Supplied	A8SW (S)	276	5	250942 58382
66	**Local Nature Reserves** Name: Bircham Valley Multiple Area: N Area (m2): 116720.52 Source: Plymouth City Council Designation Date: Not Supplied	A12SE (W)	433	5	250385 59122
67	**Local Nature Reserves** Name: Forder Valley Multiple Area: Y Area (m2): 88292.19 Source: Plymouth City Council Designation Date: Not Supplied	A2NE (SW)	747	5	250553 57976
68	**Sites of Special Scientific Interest** Name: Plymbridge Lane & Estover Road Multiple Area: Y Area (m2): 299.078 Source: Natural England Reference: 1006122 Designation Details: Not Supplied Designation Date: 20th November 1991 Date Type: Notified	A19SW (NE)	781	6	251543 59766

Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Plymouth City Council - Environmental Regulation Service	December 2006	Annual Rolling Update
South Hams District Council - Environmental Health Department	July 2006	Annual Rolling Update
Discharge Consents		
Environment Agency - South West Region	January 2007	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - South West Region	March 2007	As notified
Integrated Pollution Controls		
Environment Agency - South West Region	January 2007	Quarterly
Integrated Pollution Prevention And Control		
Environment Agency - South West Region	January 2007	Quarterly
Local Authority Integrated Pollution Prevention And Control		
South Hams District Council - Environmental Health Department	June 2006	Annual Rolling Update
Plymouth City Council - Environmental Health Department	November 2006	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
South Hams District Council - Environmental Health Department	June 2006	Annual Rolling Update
Plymouth City Council - Environmental Health Department	November 2006	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
South Hams District Council - Environmental Health Department	June 2006	Annual Rolling Update
Plymouth City Council - Environmental Health Department	November 2006	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	October 2006	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - South West Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - South West Region	March 2007	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - South West Region	March 2007	As notified
Registered Radioactive Substances		
Environment Agency - South West Region	January 2007	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	October 2006	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	October 2006	Annually
Substantiated Pollution Incident Register		
Environment Agency - South West Region - Devon Area	January 2007	Quarterly
Water Abstractions		
Environment Agency - South West Region	January 2007	Quarterly
Water Industry Act Referrals		
Environment Agency - South West Region	January 2007	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	January 1999	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Source Protection Zones		
Environment Agency - Head Office	April 2005	Variable
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	January 2007	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	January 2007	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	January 2007	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	January 2007	Quarterly
Flood Defences		
Environment Agency - Head Office	January 2007	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Environment Agency - South West Region	January 2007	Quarterly
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South West Region - Devon Area	February 2007	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South West Region - Devon Area	February 2007	Quarterly
Local Authority Landfill Coverage		
Devon County Council	May 2000	Not Applicable
Plymouth City Council - Environmental Health Department	May 2000	Not Applicable
South Hams District Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Devon County Council	May 2000	Not Applicable
Plymouth City Council - Environmental Health Department	May 2000	Not Applicable
South Hams District Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - South West Region - Devon Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - South West Region - Cornwall Area	March 2003	Not Applicable
Environment Agency - South West Region - Devon Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - South West Region - Devon Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	October 2006	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2007	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
South Hams District Council - Planning Department	April 2005	Annual Rolling Update
Devon County Council	February 2007	Annual Rolling Update
Plymouth City Council - Planning & Transport Services	July 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
South Hams District Council - Planning Department	April 2005	Annual Rolling Update
Devon County Council	February 2007	Annual Rolling Update
Plymouth City Council - Planning & Transport Services	July 2006	Annual Rolling Update

Data Currency

Geological	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2006	Bi-Annually
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Brine Compensation Areas Cheshire Brine Subsidence Compensation Board	November 2002	As notified
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural and Mining Cavities Peter Brett Associates	December 2005	Variable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Radon Affected Areas Health Protection Agency	January 2003	Not Applicable
Radon Protection Measures British Geological Survey - National Geoscience Information Service	August 2002	Variable
Shallow Mining Hazards British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	November 2006	Quarterly
Fuel Station Entries Catalist Ltd - (Fuel Station Data)	December 2006	Quarterly

Data Currency

Sensitive Land Use	Version	Update Cycle
Areas of Outstanding Natural Beauty The Countryside Agency	November 2006	Annually
Environmentally Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2006	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves South Hams District Council - Planning Department Plymouth City Council	January 2000 September 1999	Variable Variable
Marine Nature Reserves Natural England	November 2006	Bi-Annually
National Nature Reserves Natural England	November 2006	Bi-Annually
National Parks ...e Countryside Agency	October 2006	Annually
...itrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	May 2006	Annually
Ramsar Sites Natural England	November 2006	Bi-Annually
Sites of Special Scientific Interest Natural England	November 2006	Bi-Annually
Special Areas of Conservation Natural England	November 2006	Bi-Annually
Special Protection Areas Natural England	November 2006	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
ritish Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**Plymouth City Council - Environmental Health Department** Civic Centre, Royal Parade, Plymouth, Devon, PL1 2EW	Telephone: 01752 668000 Fax: 01752 264946 Website: www.plymouth.gov.uk
3	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	**Health Protection Agency** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 831600 Fax: 01235 833891
5	**Plymouth City Council** Civic Centre, Plymouth, Devon, PL1 2EW	Telephone: 01752 668000 Fax: 01752 304931 Website: www.plymouth.gov.uk
6	**Natural England** Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 0845 600 3078 Fax: 01733 455103 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	**Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmark-information.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.

FABER MAUNSELL | AECOM

Envirocheck® Report:

BGS Boreholes Datasheet

Order Details:

Order Number:
21330175_1_1

Customer Reference:
Estover College

National Grid Reference:
250980, 58920

Sheet:
A

Site Area (Ha):
14.81

Borehole Search Buffer (m):
1000

Site Details:

Estover Community College
Miller Way
PLYMOUTH
PL6 8UN

Client Details:

Mr C Edwards
Faber Maunsell
Bush House
Prince Street
Bristol
BS1 4QD

BGS Boreholes Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
BGS Boreholes	pg 1	None	None	5	22

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Report Version v25.0

BGS Boreholes Detail

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**BGS Boreholes** BGS Reference: Sx55nw172 Drilled Length (m): 6 Borehole Name: Plymouth Novorossisk Road Bh1	A8SE (SE)	322	3	251200 58480
69	**BGS Boreholes** BGS Reference: Sx55nw173 Drilled Length (m): 5 Borehole Name: Plymouth Novorossisk Road Bh2	A8SE (SE)	322	3	251200 58480
69	**BGS Boreholes** BGS Reference: Sx55nw174 Drilled Length (m): 5 Borehole Name: Plymouth Novorossisk Road Bh3	A8SE (SE)	322	3	251200 58480
69	**BGS Boreholes** BGS Reference: Sx55nw175 Drilled Length (m): 5 Borehole Name: Plymouth Novorossisk Road Bh5	A8SE (SE)	322	3	251200 58480
69	**BGS Boreholes** BGS Reference: Sx55nw176 Drilled Length (m): 5 Borehole Name: Plymouth Novorossisk Road Bh6	A8SE (SE)	322	3	251200 58480
70	**BGS Boreholes** BGS Reference: Sx55nw177 Drilled Length (m): 6.09 Borehole Name: Plymouth Thornbury Farm Hyd.Bh	A18SE (N)	557	3	251180 59730
71	**BGS Boreholes** BGS Reference: Sx55nw235 Drilled Length (m): 103.63 Borehole Name: Wrigleys Bh, Plymouth	A14NE (NE)	685	3	251700 59500
71	**BGS Boreholes** BGS Reference: Sx55nw236 Drilled Length (m): 107 Borehole Name: Wrigley Company Ltd, Estover	A14NE (NE)	685	3	251700 59500
72	**BGS Boreholes** BGS Reference: Sx55nw204 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 10	A17SE (NW)	781	3	250330 59660
73	**BGS Boreholes** BGS Reference: Sx55nw207 Drilled Length (m): 3 Borehole Name: Science Pk,Derriford Bh 7	A17SW (NW)	811	3	250260 59630
73	**BGS Boreholes** BGS Reference: Sx55nw203 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 9	A17SW (NW)	834	3	250230 59630
74	**BGS Boreholes** BGS Reference: Sx55nw201 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 7	A17SW (NW)	845	3	250280 59710
74	**BGS Boreholes** BGS Reference: Sx55nw206 Drilled Length (m): 3 Borehole Name: Science Pk,Derriford Bh 6	A17SW (NW)	858	3	250300 59740
75	**BGS Boreholes** BGS Reference: Sx55nw205 Drilled Length (m): 3 Borehole Name: Science Pk,Derriford Bh 5	A17SW (NW)	845	3	250260 59680
75	**BGS Boreholes** BGS Reference: Sx55nw200 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 6	A17SW (NW)	881	3	250220 59690
76	**BGS Boreholes** BGS Reference: Sx55nw202 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 8	A17SW (NW)	881	3	250170 59630

BGS Boreholes Detail

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
77	**BGS Boreholes** BGS Reference: Sx55nw197 Drilled Length (m): 3 Borehole Name: Science Pk,Derriford Tp 3	A17SW (NW)	887	3	250290 59770
78	**BGS Boreholes** BGS Reference: Sx55nw194 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Bh 4	A17SW (NW)	908	3	250250 59760
78	**BGS Boreholes** BGS Reference: Sx55nw198 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 4	A17SW (NW)	915	3	250260 59780
78	**BGS Boreholes** BGS Reference: Sx55nw196 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 2	A17SW (NW)	944	3	250220 59780
78	**BGS Boreholes** BGS Reference: Sx55nw192 Drilled Length (m): 3 Borehole Name: Science Pk,Derriford Bh 2	A17SW (NW)	958	3	250180 59760
79	**BGS Boreholes** BGS Reference: Sx55nw193 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Bh 3	A17SW (NW)	912	3	250170 59680
79	**BGS Boreholes** BGS Reference: Sx55nw199 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 5	A17SW (NW)	936	3	250140 59680
79	**BGS Boreholes** BGS Reference: Sx55nw191 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Bh 1	A17SW (NW)	955	3	250140 59710
80	**BGS Boreholes** BGS Reference: Sx45ne518 Drilled Length (m): 100 Borehole Name: Derriford Hospital, Plymouth	A11NE (NW)	994	3	249890 59390
80	**BGS Boreholes** BGS Reference: Sx45ne519 Drilled Length (m): 145 Borehole Name: Derriford Hospital, Plymouth	A11NE (NW)	999	3	249880 59380
81	**BGS Boreholes** BGS Reference: Sx55nw195 Drilled Length (m): 2 Borehole Name: Science Pk,Derriford Tp 1	A17SW (NW)	995	3	250130 59760

Data Currency and Contact Details

BGS Boreholes	Version	Update Cycle
BGS Boreholes British Geological Survey - National Geoscience Information Service	January 2007	Quarterly

Contact Details	Contact Logo
3 **British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
- **Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmark-information.co.uk	LANDMARK® Information Group

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Agency and Hydrological

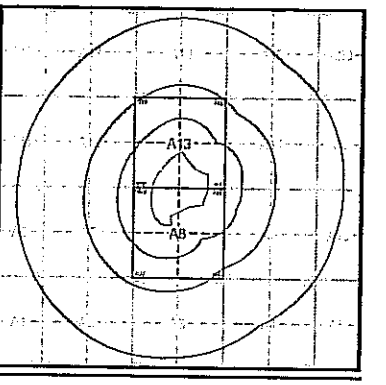
Order Details

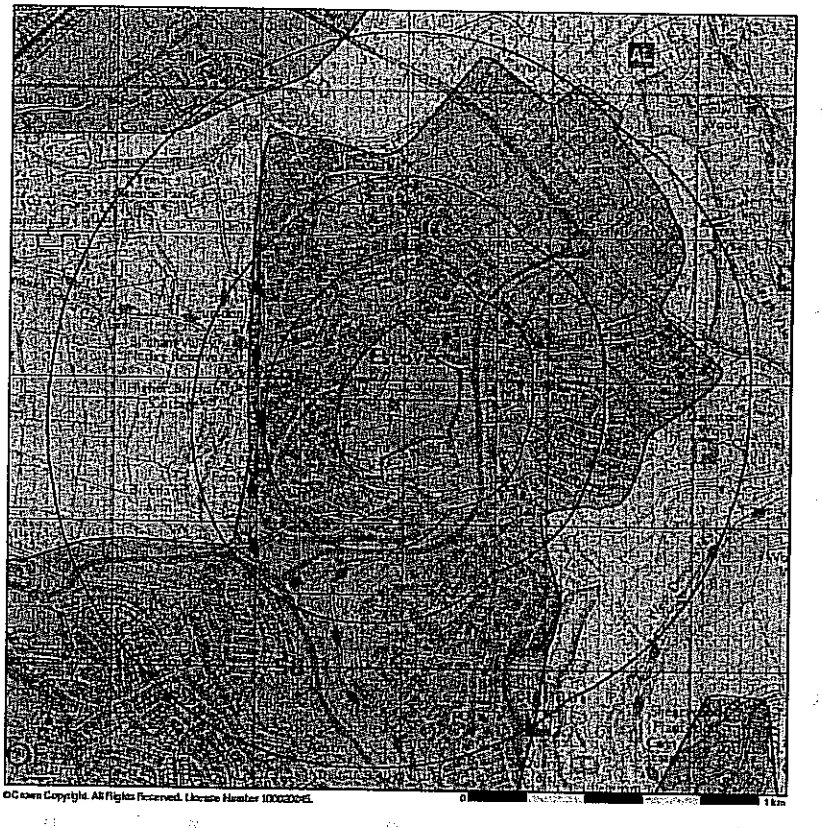
Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

Groundwater Vulnerability - Slice A





Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency & Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Agency and Hydrological

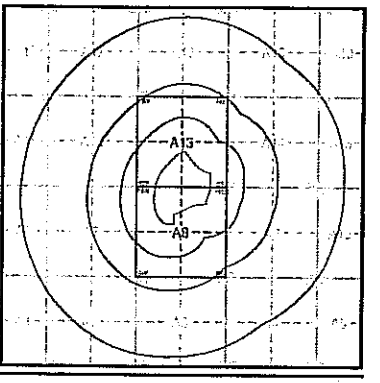
Order Details

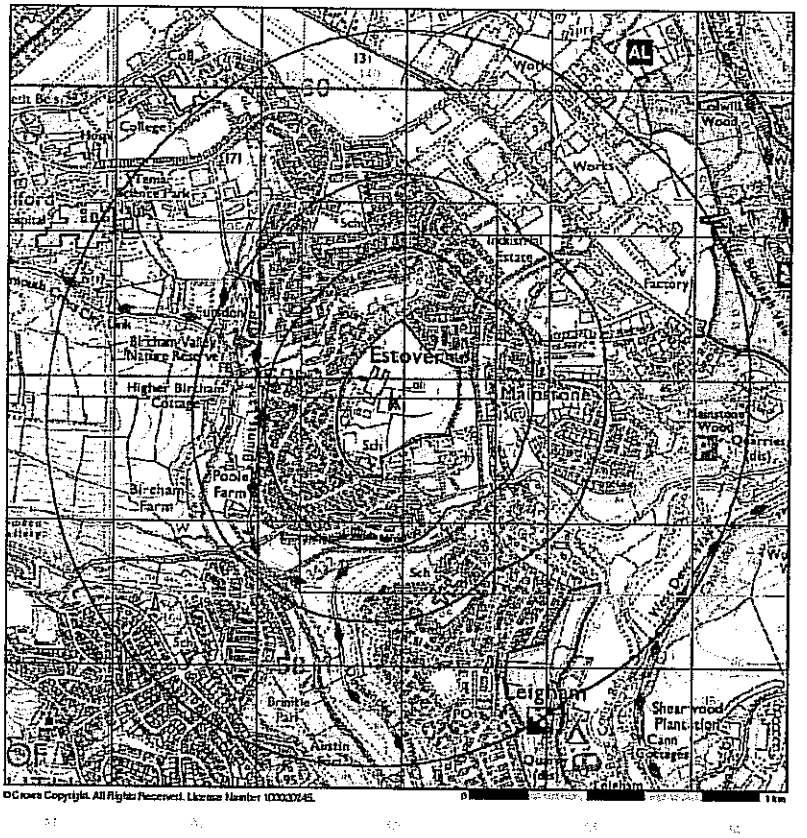
Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

Source Protection Zones - Slice A





Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- A Map ID

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

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Sensitive Land Uses

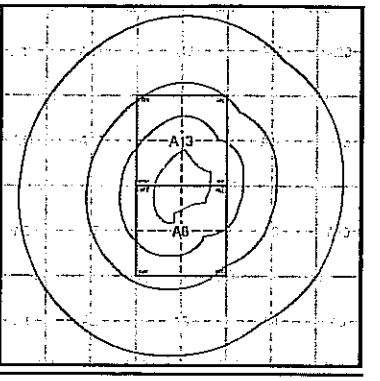
Order Details

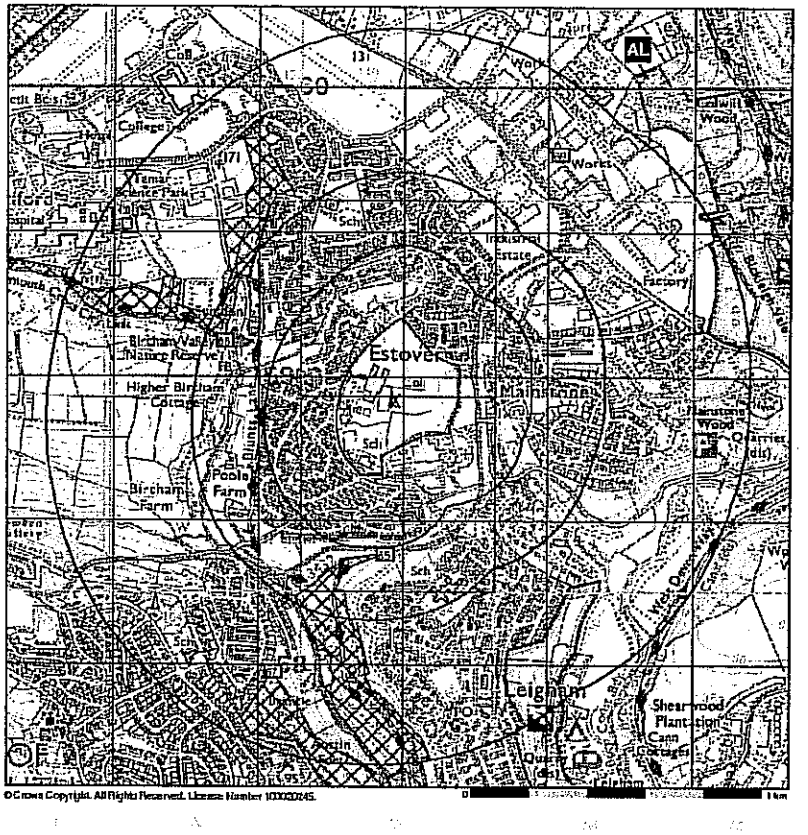
Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

Sensitive Land Uses - Slice A





Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

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General
- Specified Site
- Specified Buffer(s)
- Drawing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

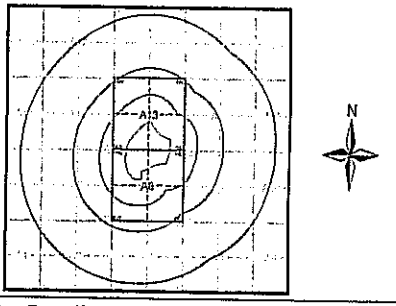
Waste
- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances
- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological
- BGS Recorded Mineral Site

Industrial Land Use
- Contemporary Trade Directory Entry
- Fuel Station Entry

Site Sensitivity Map - Slice A



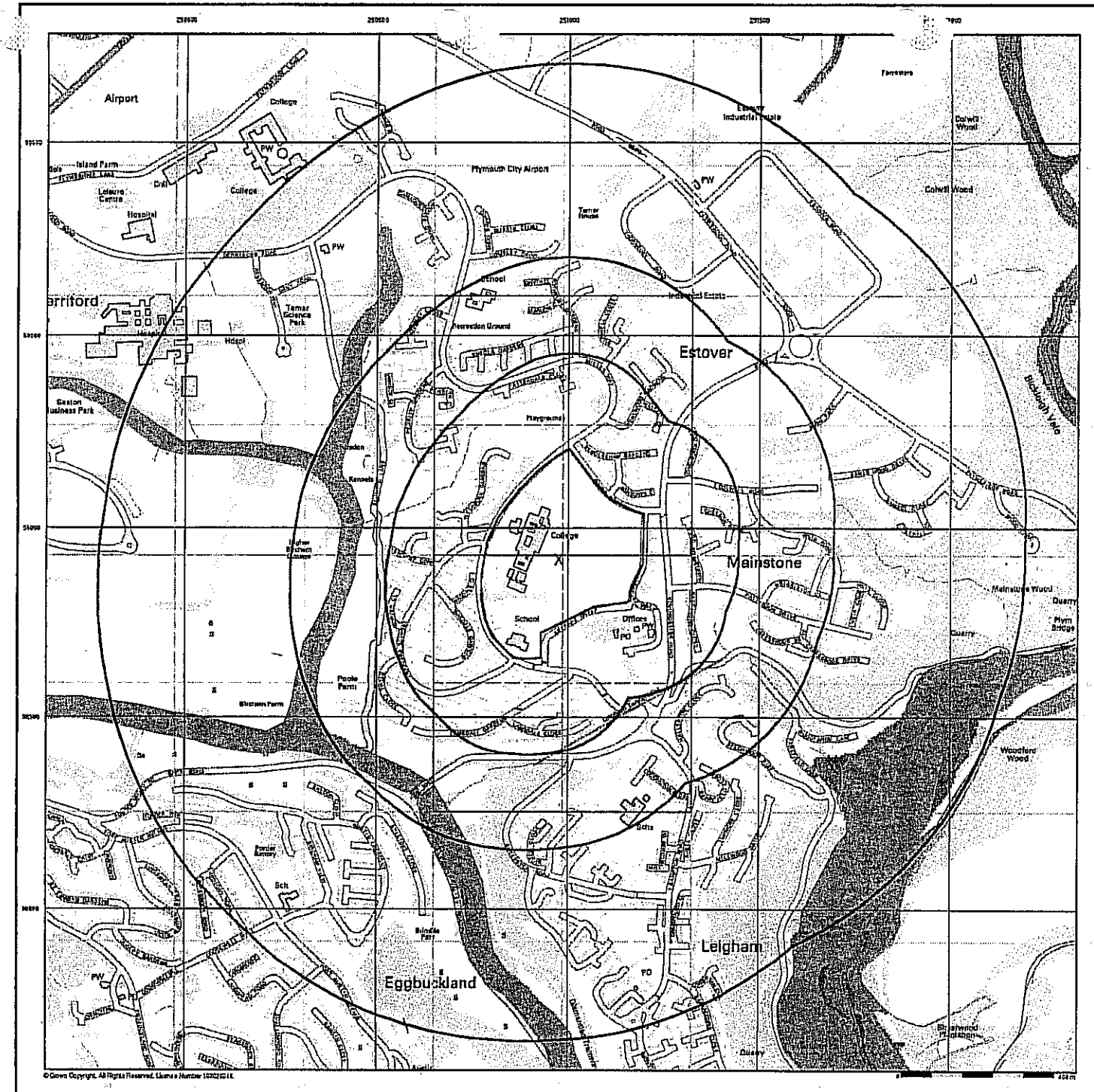
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.environcheck.co.uk



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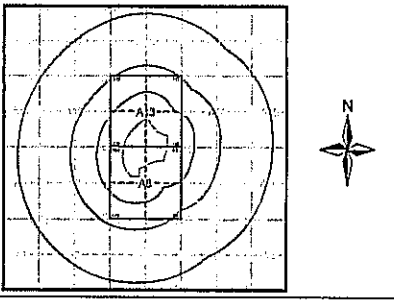
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



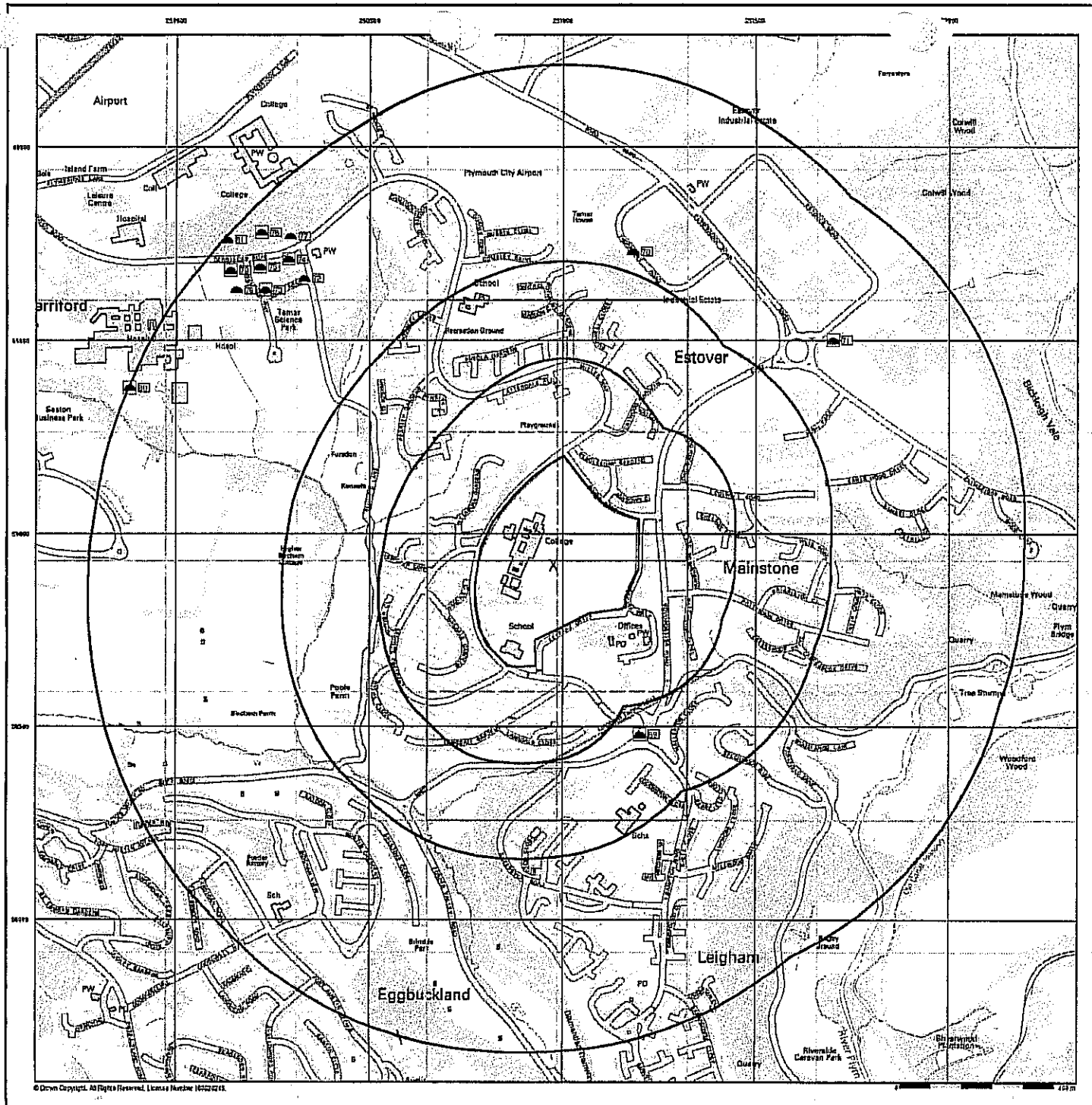
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6870
Fax: 0870 850 0871
Web: www.envirocheck.co.uk



FABER MAUNSELL | AECOM

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

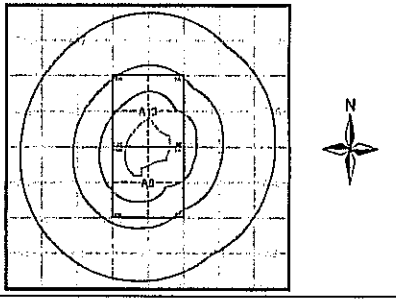
Agency and Hydrological (Boreholes)

- BGS Borehole

For Borehole information please refer to the Borehole datasheet which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



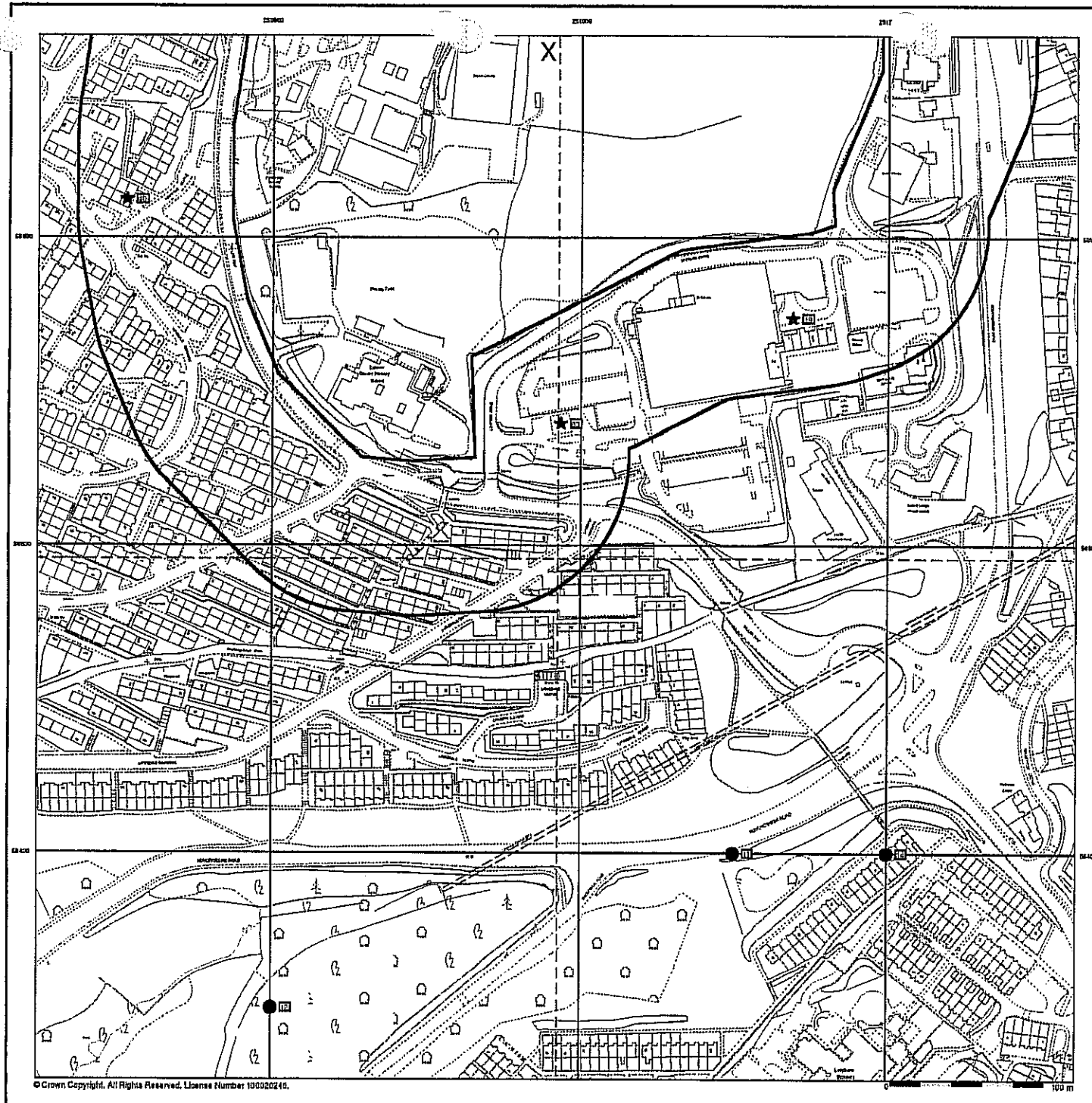
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several or Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
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- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

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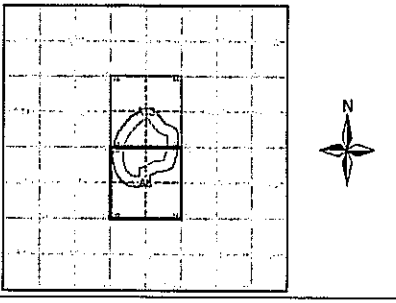
- BGS Recorded Landfill Site
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Area Buffered to 125m)
- Registered Landfill Site (Area Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances
- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological
- BGS Recorded Mineral Site

Industrial Land Use
- Contemporary Trade Directory Entry
- Fuel Station Entry

Site Sensitivity Map - Segment A8



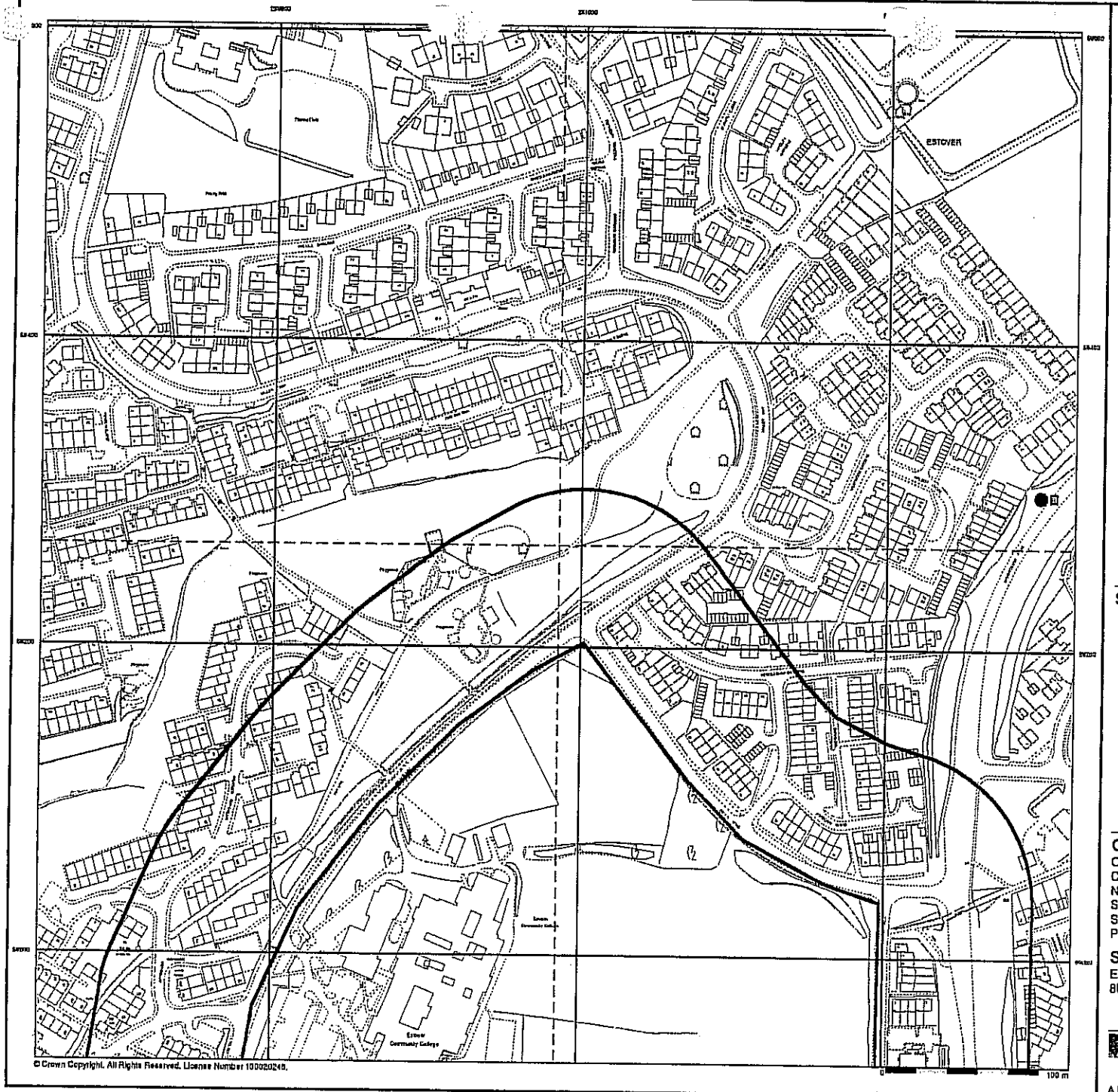
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Plot Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 0570
Fax: 0870 850 0571
Web: www.environcheck.co.uk



FABER MAUNSELL | AECOM

General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
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- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
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- River Quality Sampling Point
- Substantiated Pollution Incident Register
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- Water Industry Act Referral

Waste
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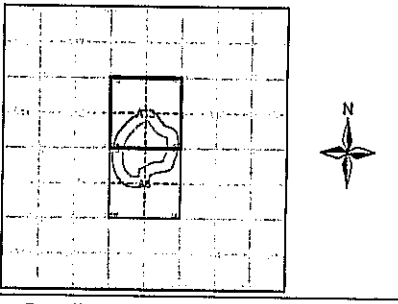
- Registered Landfill Site (Location)
- Registered Landfill Site (Point, Buffered to 100m)
- Registered Landfill Site (Point, Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances
- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological
- BGS Recorded Mineral Site

Industrial Land Use
- Contemporary Trade Directory Entry
- Fuel Station Entry

Site Sensitivity Map - Segment A13



Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Plot Buffer (m):	100

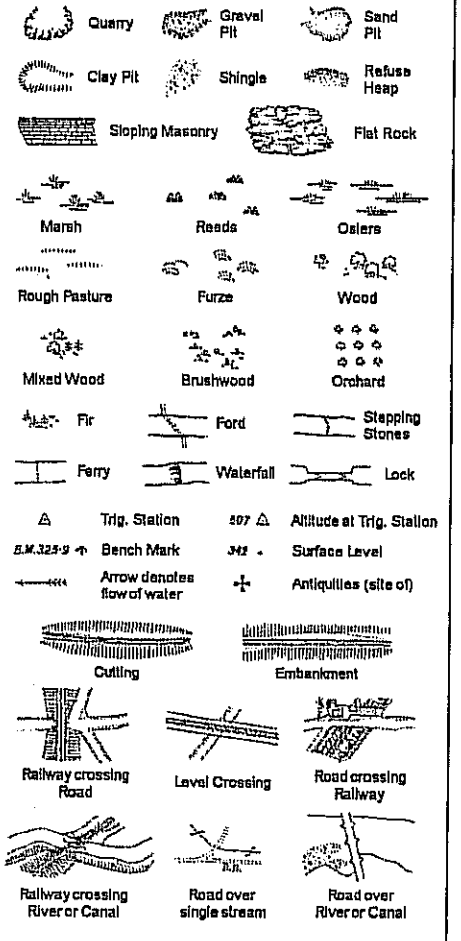
Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6570
Fax: 0870 850 6571
Web: www.envirocheck.co.uk

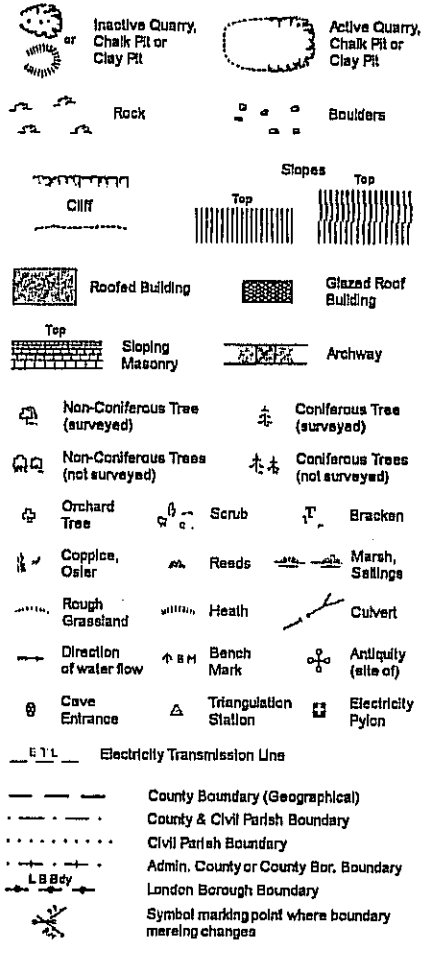
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



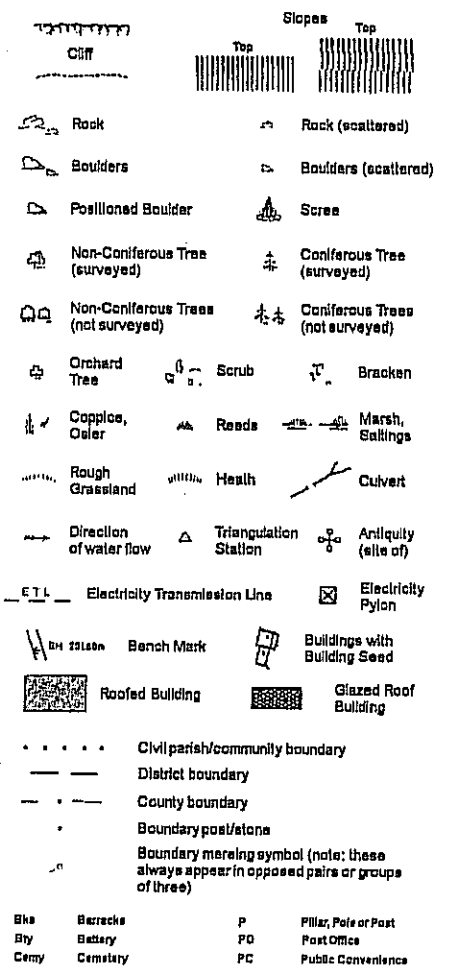
B.P. B.S.	Boundary Post or Stone	P.C.B.	Police Call Box
B.R.	Bridle Road	P.	Pump
E.P.	Electricity Pylon	S.P.	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P.	Guide Post or Board	T.C.B.	Telephone Call Box
M.S.	Mile Stone	Tr.	Trough
M.P. M.R.	Mooring Post or Ring	W.	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Fin.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governor	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MB	Mile Post or Mile Stone	W	Well

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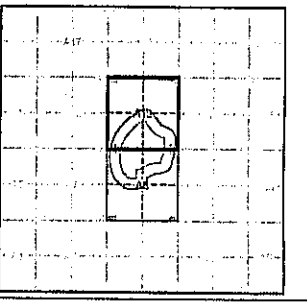
Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Devon	1:2,500	1867 - 1886	2
Devon	1:2,500	1906	3
Ordnance Survey Plan	1:2,500	1951 - 1952	4
Ordnance Survey Plan	1:1,250	1973 - 1982	5
Additional SIMs	1:2,500	1968	6
Additional SIMs	1:1,250	1978 - 1992	7
Additional SIMs	1:1,250	1984	8
Large-Scale National Grid Data	1:1,250	1992	9
Large-Scale National Grid Data	1:1,250	1993 - 1994	10
Large-Scale National Grid Data	1:1,250	1994	11

Historical Map - Segment A13



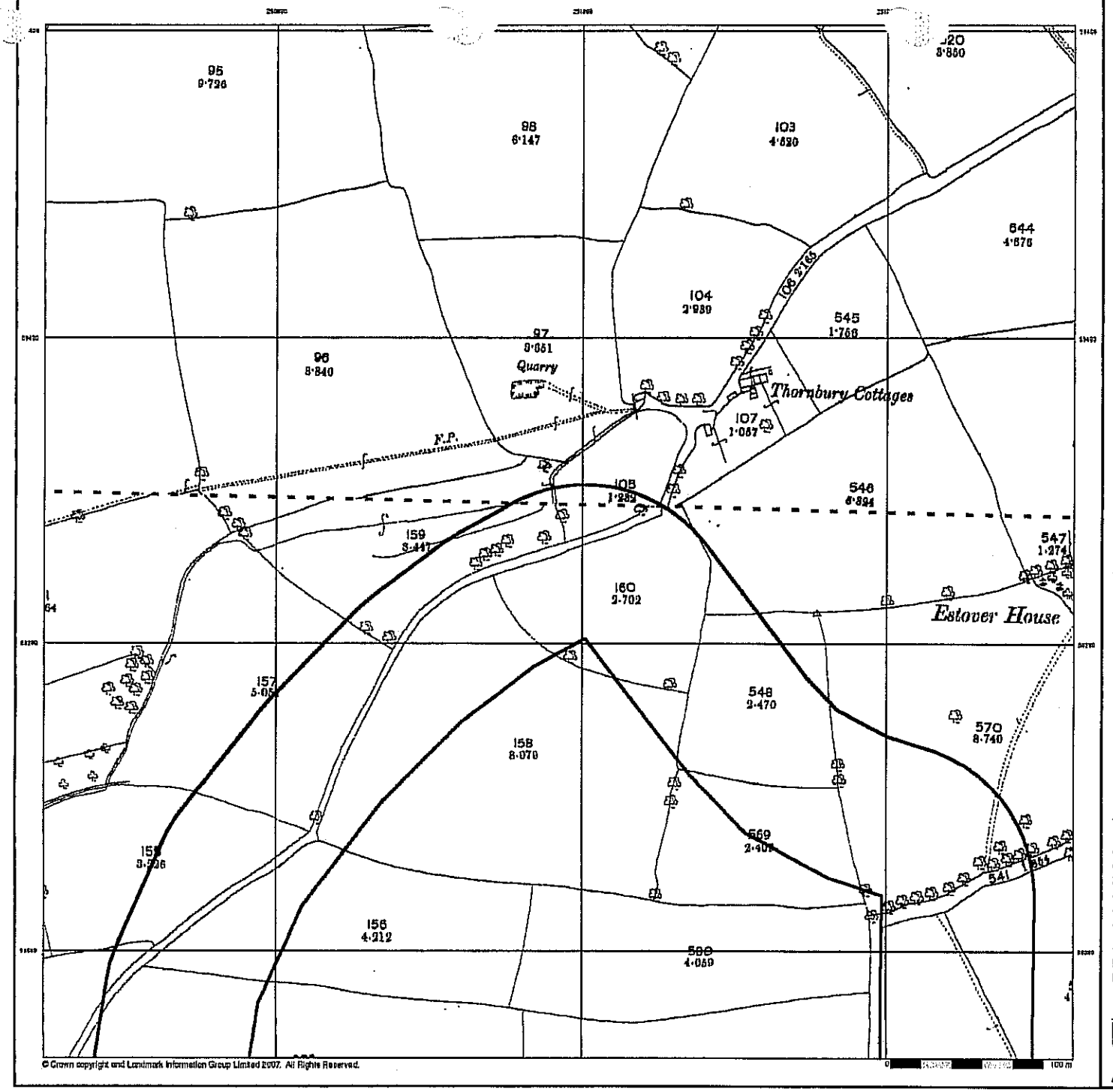
Order Details

Order Number: 21330175_1_1
Customer Ref: Estover College
National Grid Reference: 250980, 58920
Sheet: A
Site Area (Ha): 14.81
Search Buffer (m): 100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6870
Fax: 0870 850 6871
Web: www.envirocheck.co.uk



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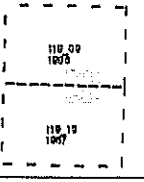
Devon

Published 1867 - 1886

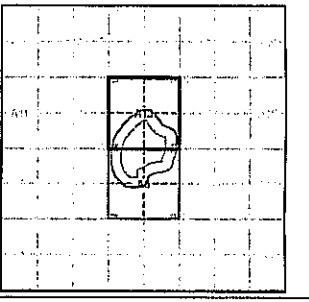
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



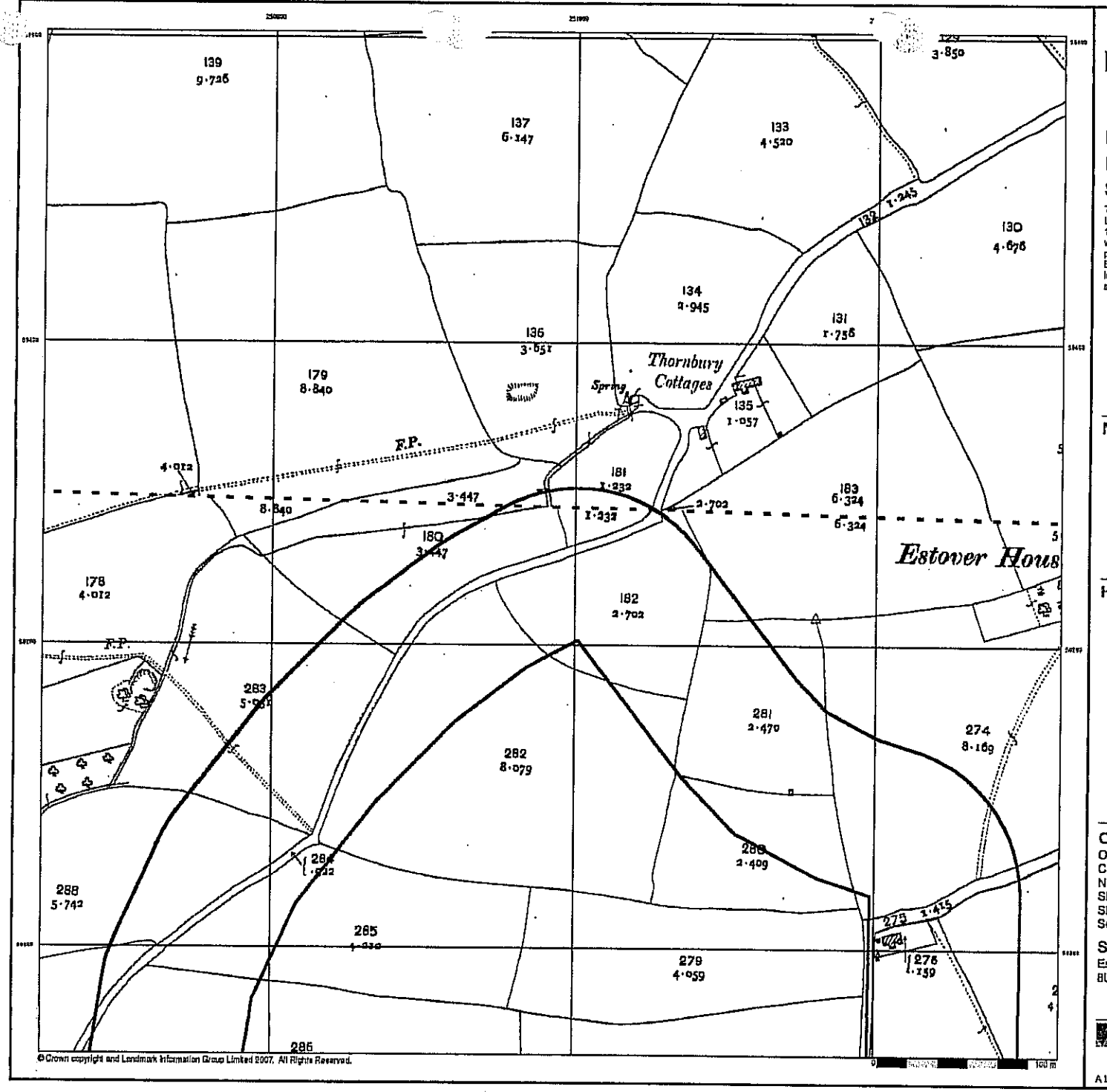
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6870
Fax: 0870 850 6871
Web: www.environcheck.co.uk

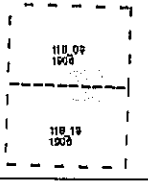


FABER MAUNSELL | AECOM

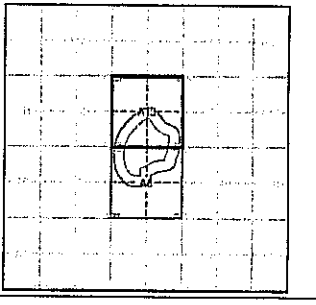
Devon
Published 1906
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1939, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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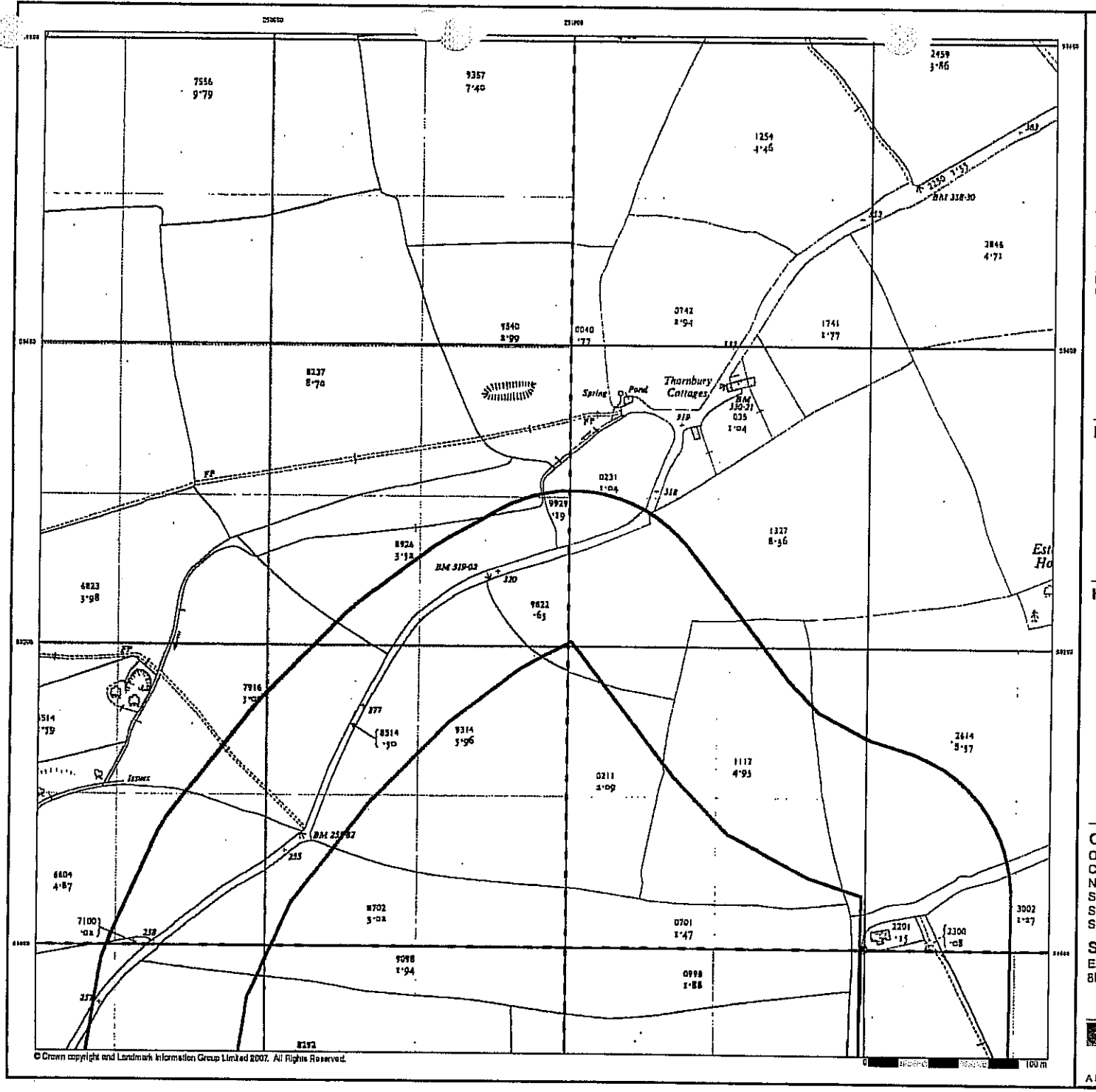
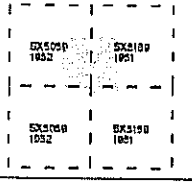


FABER MAUNSELL | AECOM

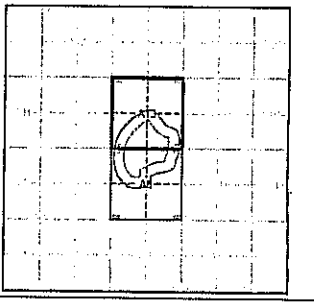
Ordnance Survey Plan
Published 1951 - 1952
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1890 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	21330175_1_1
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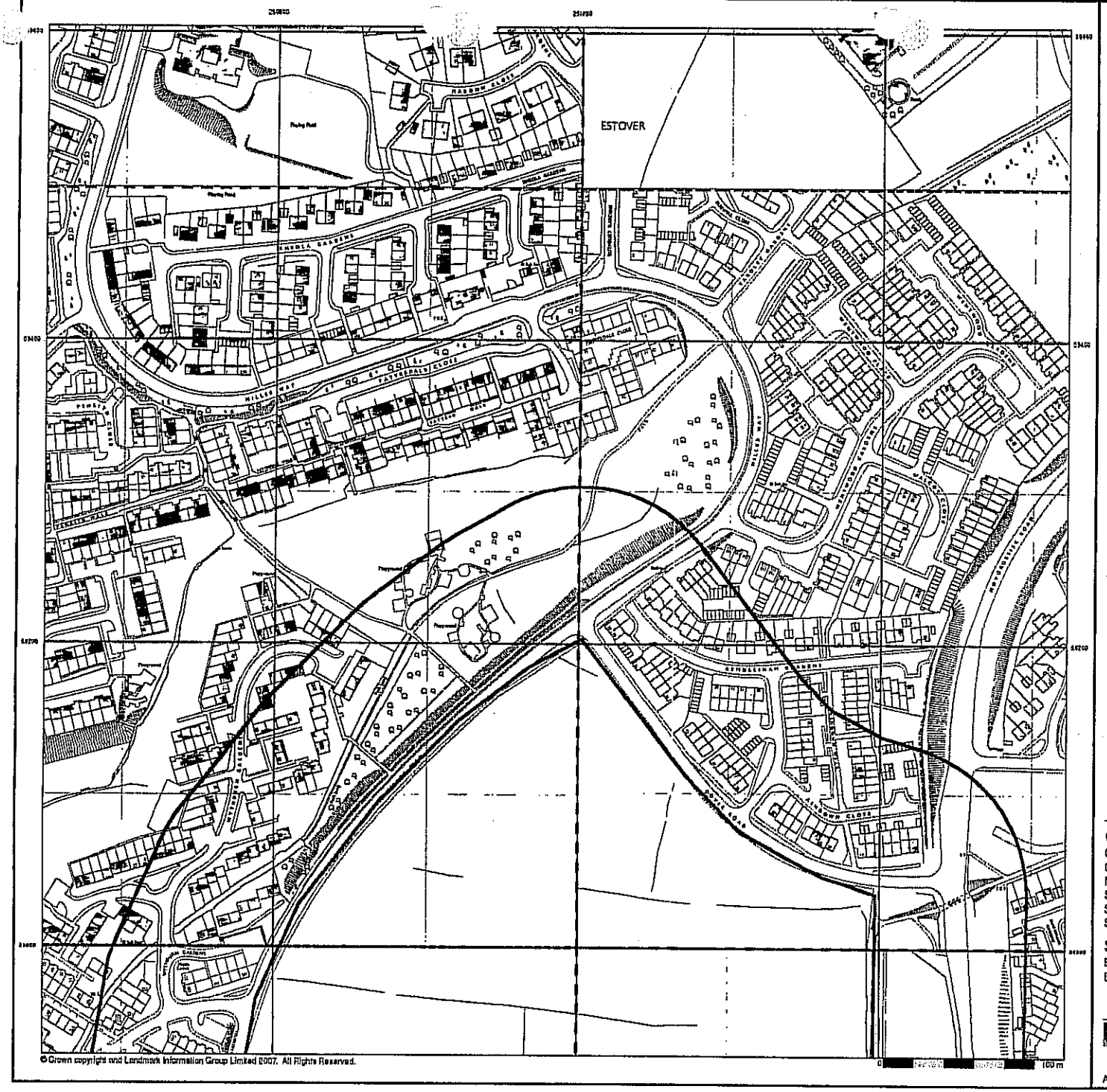
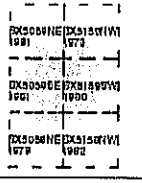


FABER MAUNSELL | AECOM

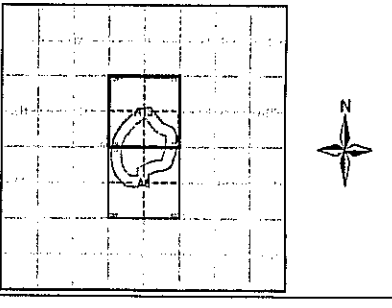
Ordnance Survey Plan
Published 1973 - 1982
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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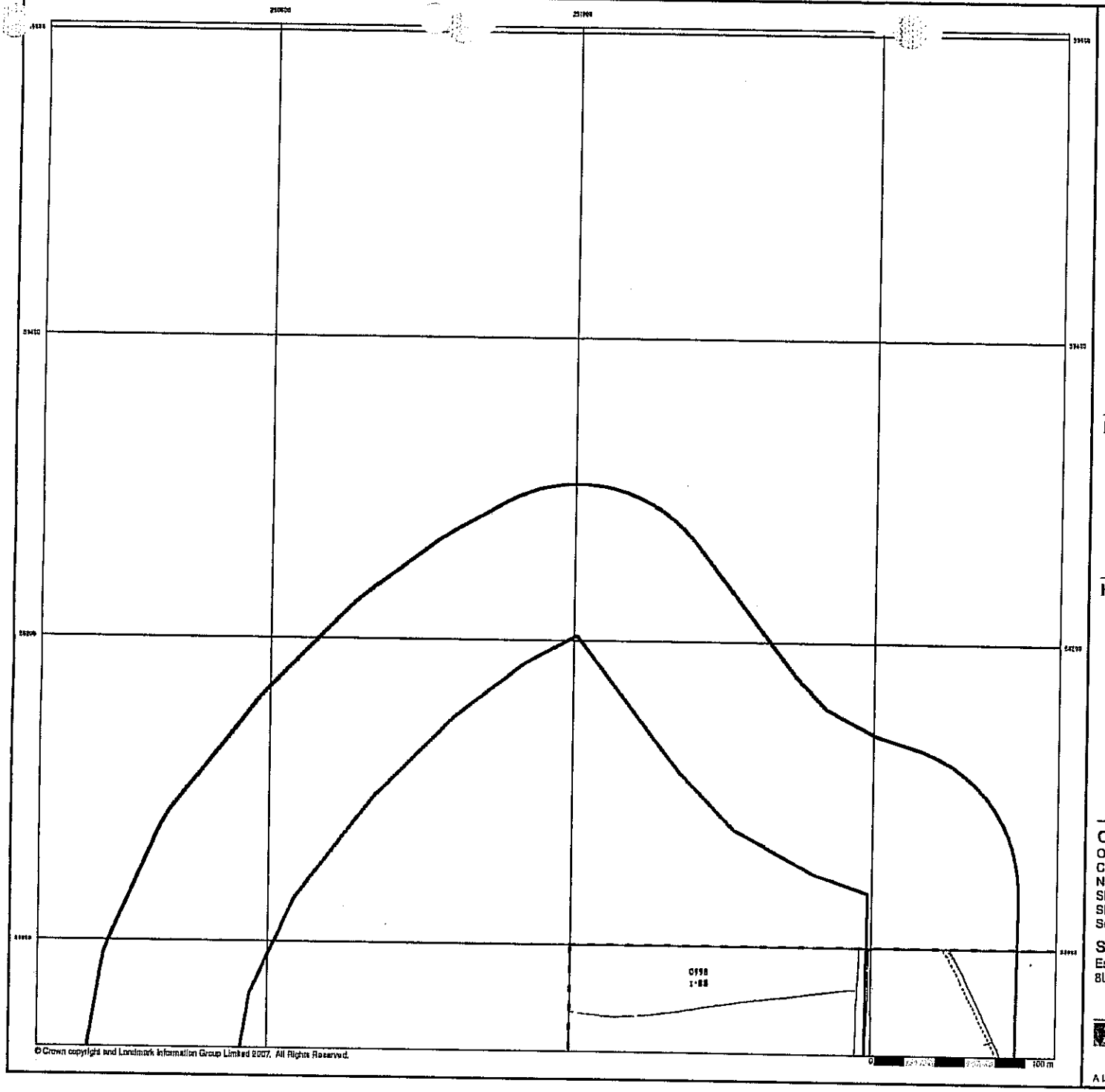


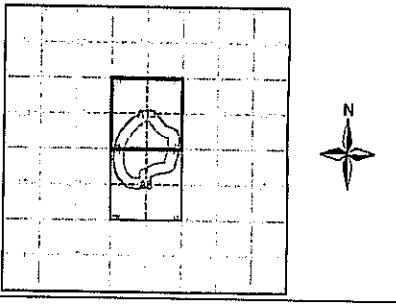
FABER MAUNSELL | AECOM

Additional SIMs
Published 1988
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13



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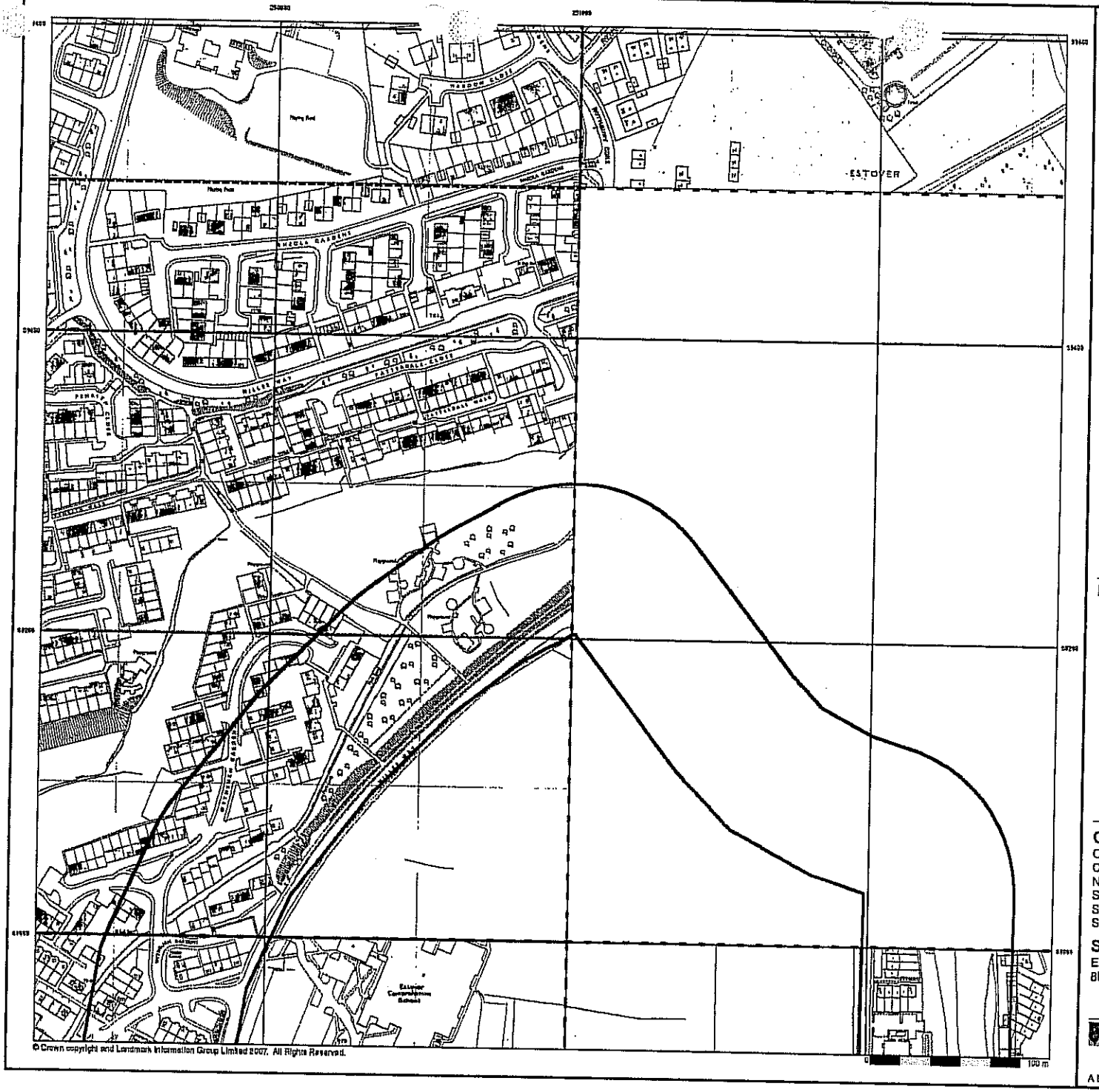
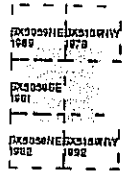


FABER MAUNSELL | AECOM

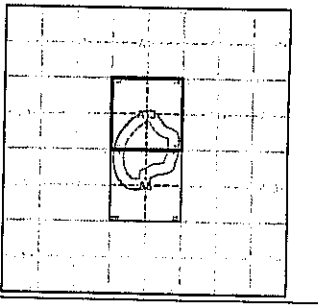
Additional SIMs
Published 1978 - 1992
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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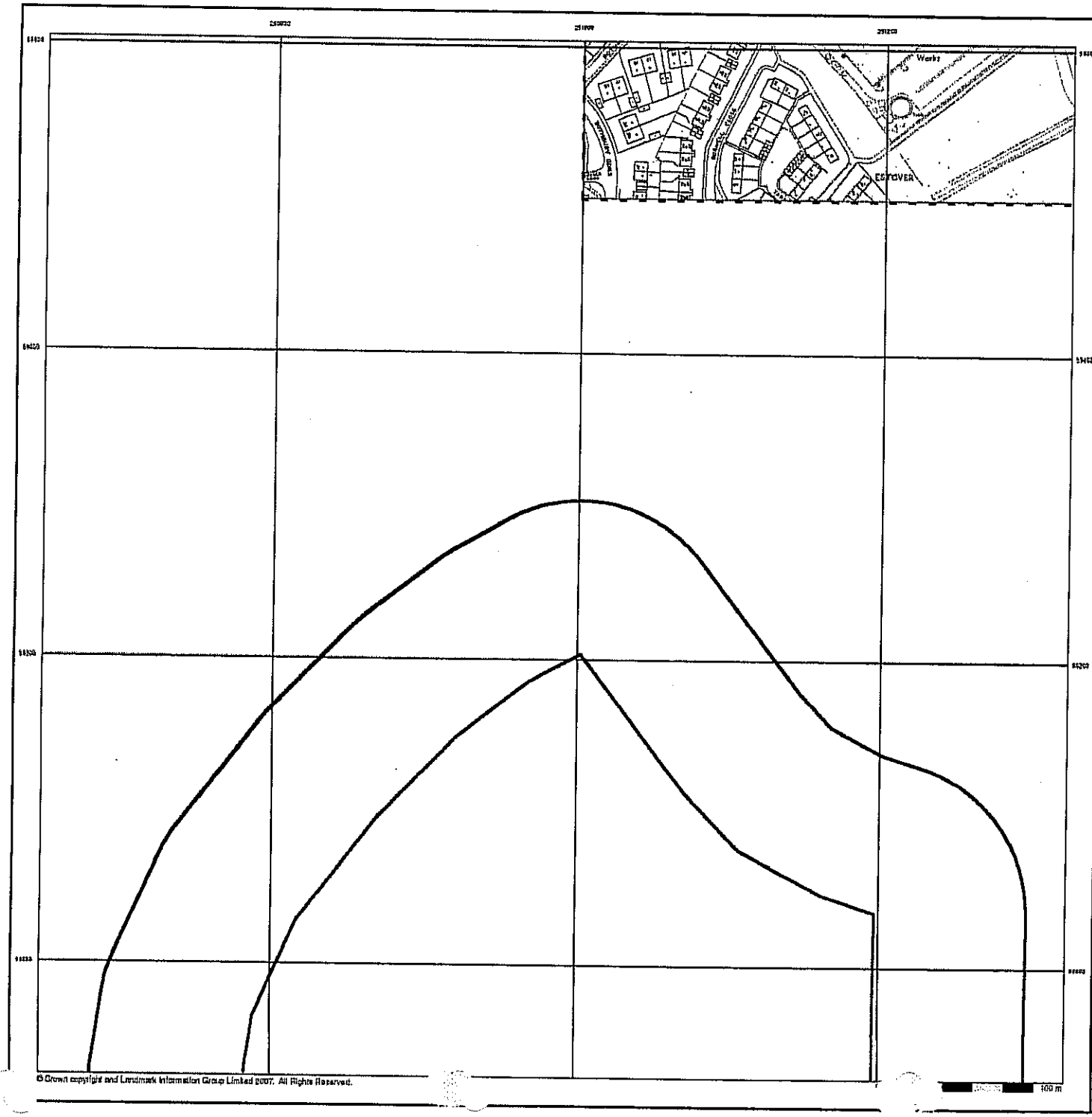


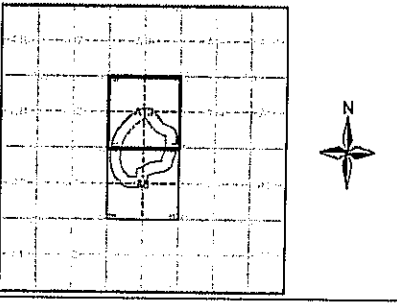
FABER MAUNSELL | AECOM

Additional SIMs
Published 1984
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13



Order Details

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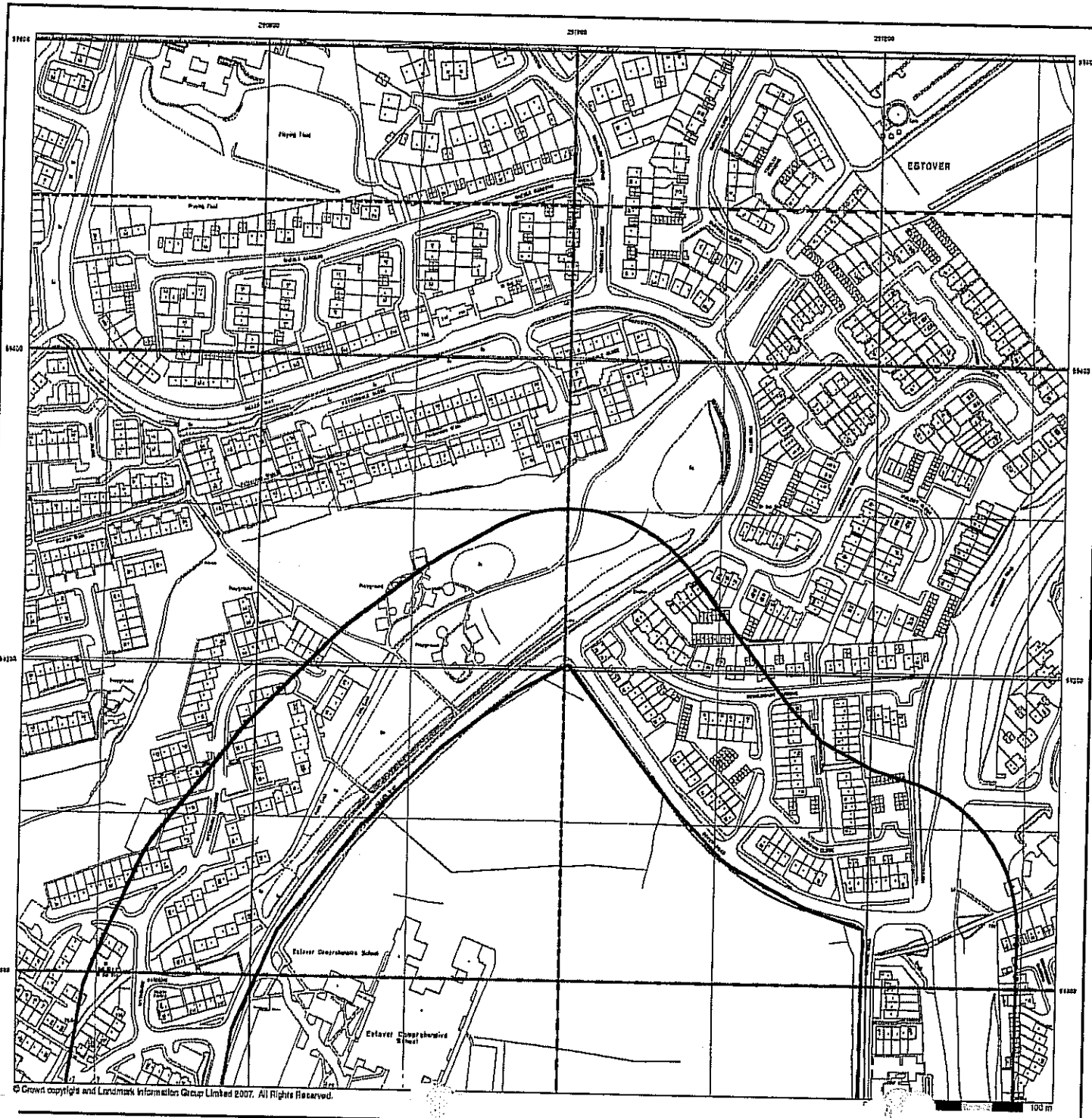


FABER MAUNSELL | AECOM

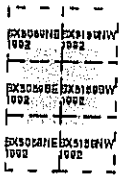
Large-Scale National Grid Data

Published 1992

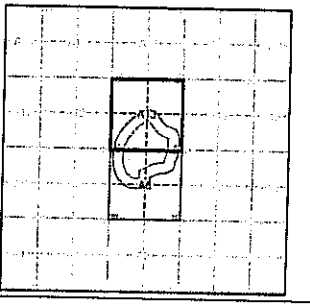
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13

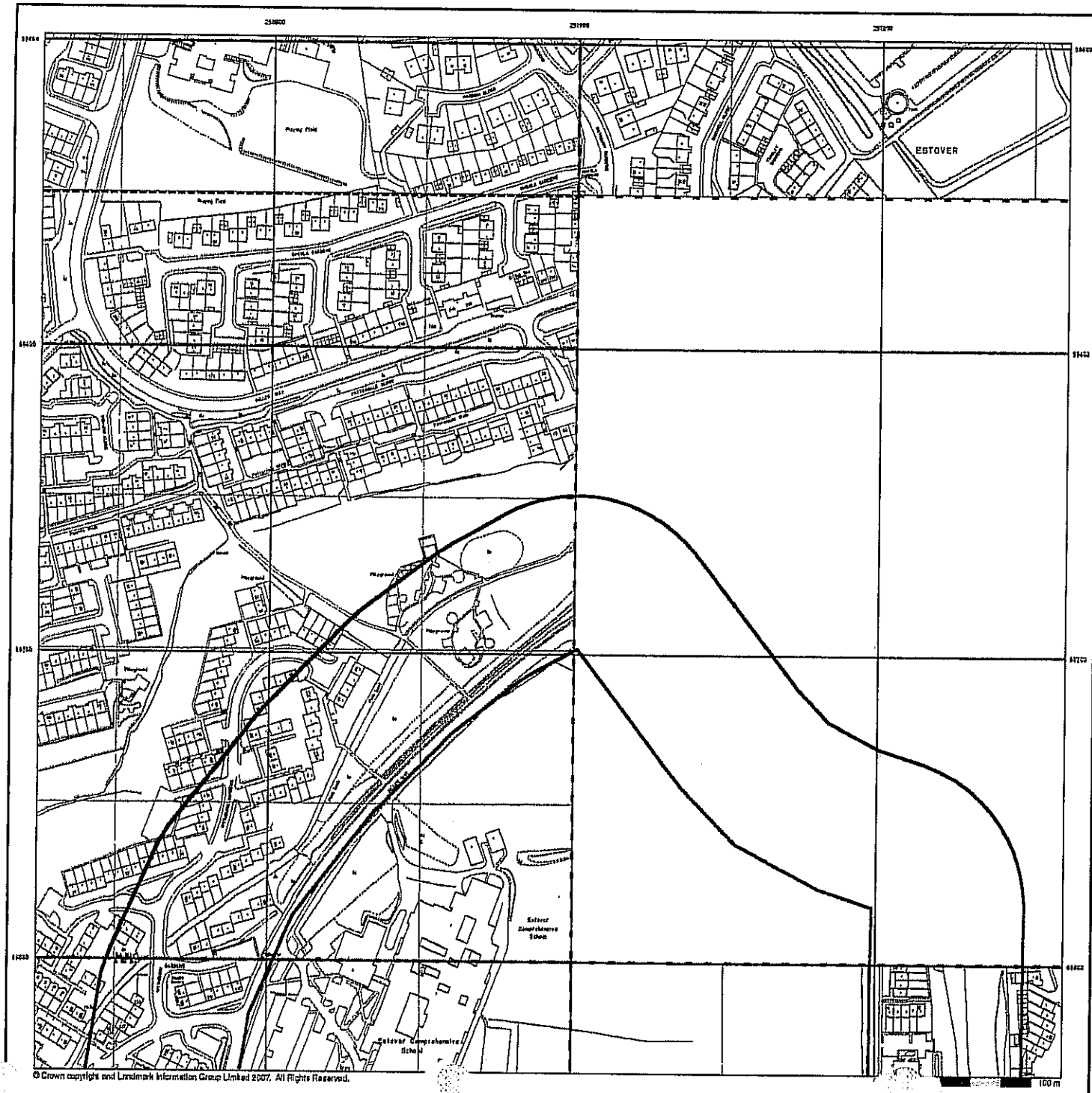


Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

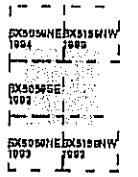


FABER MAUNSELL | AECOM

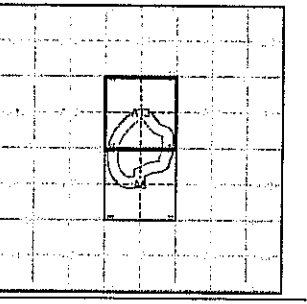
Large-Scale National Grid Data
Published 1993 - 1994
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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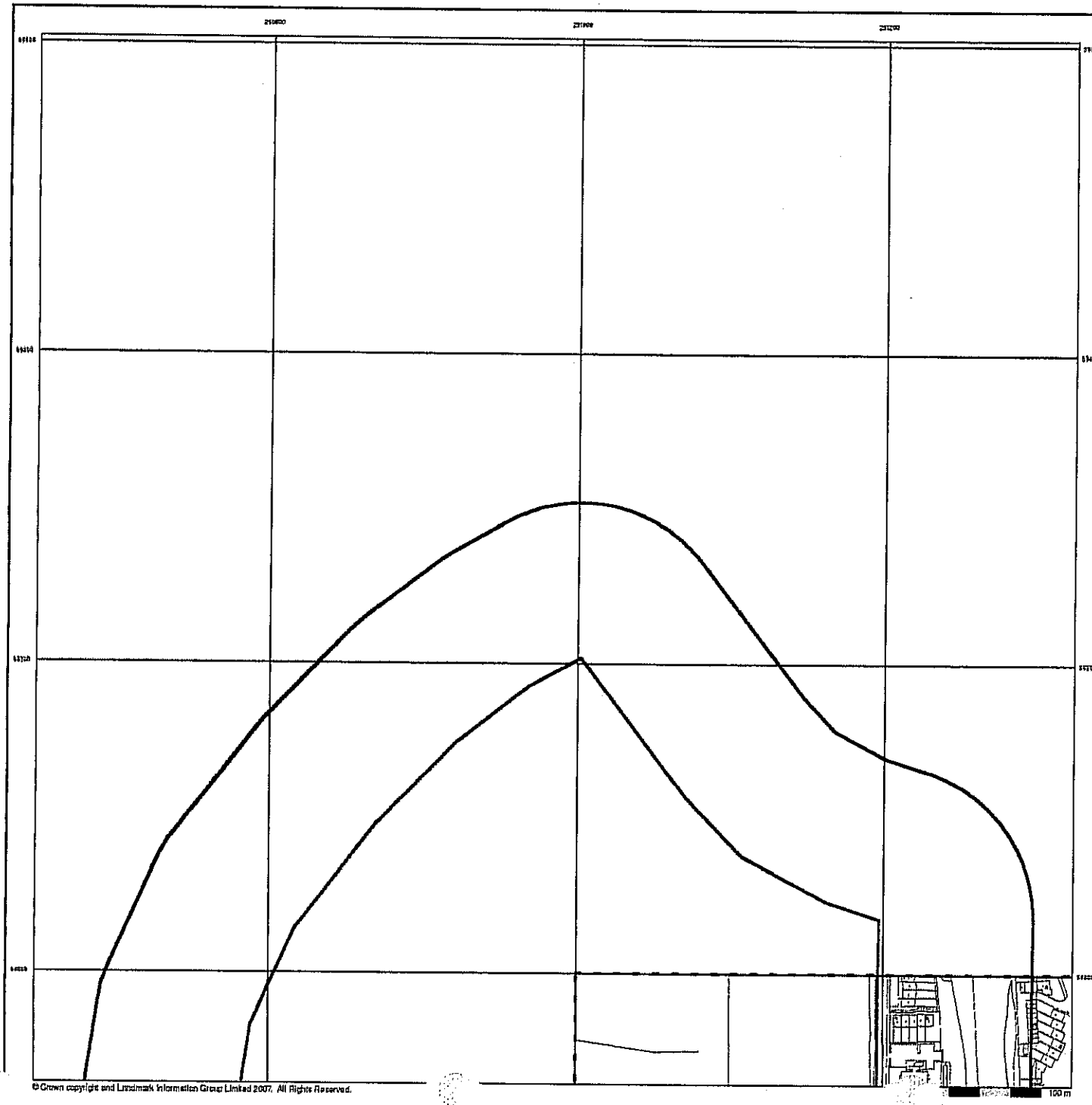


FABER MAUNSELL | AECOM

Large-Scale National Grid Data

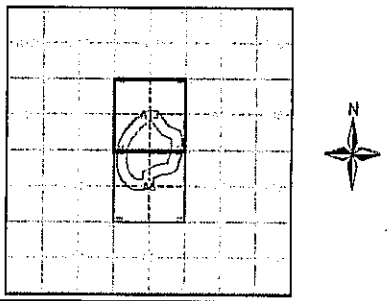
Published 1994

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13



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Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads (Fenced / Un-Fenced)
Minor Roads (Fenced / Un-Fenced)
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
RD. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Sloping Masonry
Electricity Transmission Line
Pole
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only where not coincident with other boundaries
Civil Parish
Shown alternately when coincidences at boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

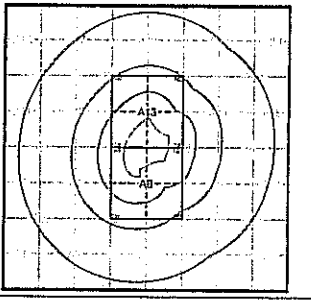
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
Bench mark (where shown) 123.45 m
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

FABER MAUNSELL | AECOM

Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Cornwall & Isles Of Scilly	1:10,560	1868	2
Devon	1:10,560	1869 - 1886	3
Devon	1:10,560	1907	4
Devon	1:10,560	1933	5
Devon	1:10,560	1938	6
Ordnance Survey Plan	1:10,560	1954	7
Ordnance Survey Plan	1:10,560	1957 - 1968	8
Ordnance Survey Plan	1:10,000	1976 - 1982	9
Ordnance Survey Plan	1:10,000	1989 - 1995	10
10K Raster Mapping	1:10,000	1999	11
10K Raster Mapping	1:10,000	2004	12

Historical Map - Slice A



Order Details

Order Number: 21330175_1_1
Customer Ref: Estover College
National Grid Reference: 250980, 58920
Sheet: A
Site Area (Ha): 14.81
Search Buffer (m): 1000

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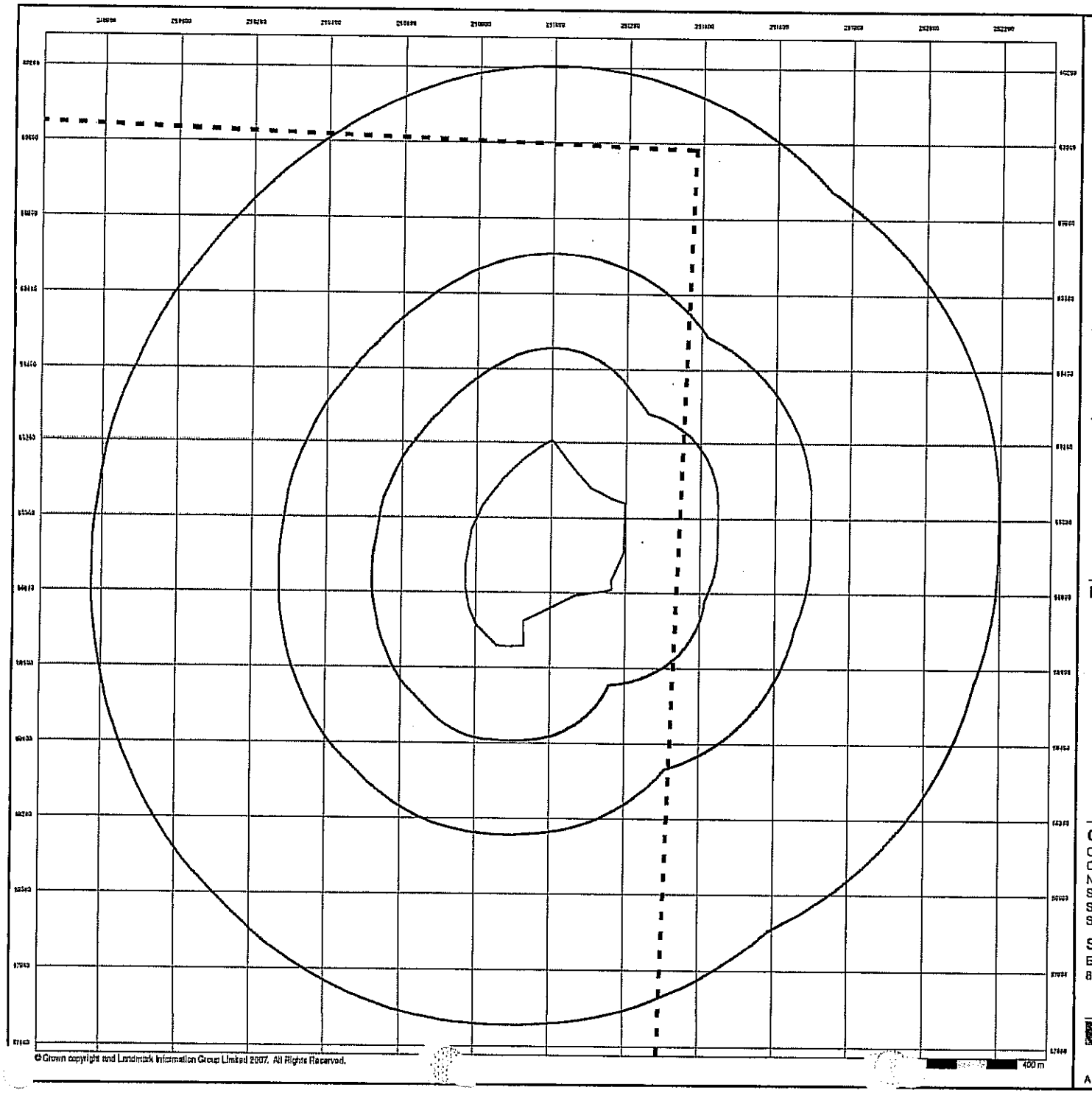
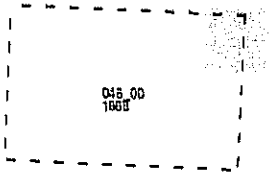


FABER MAUNSELL | AECOM

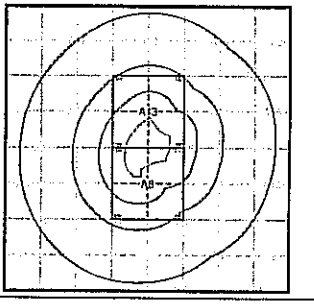
Cornwall & Isles Of Scilly
Published 1868
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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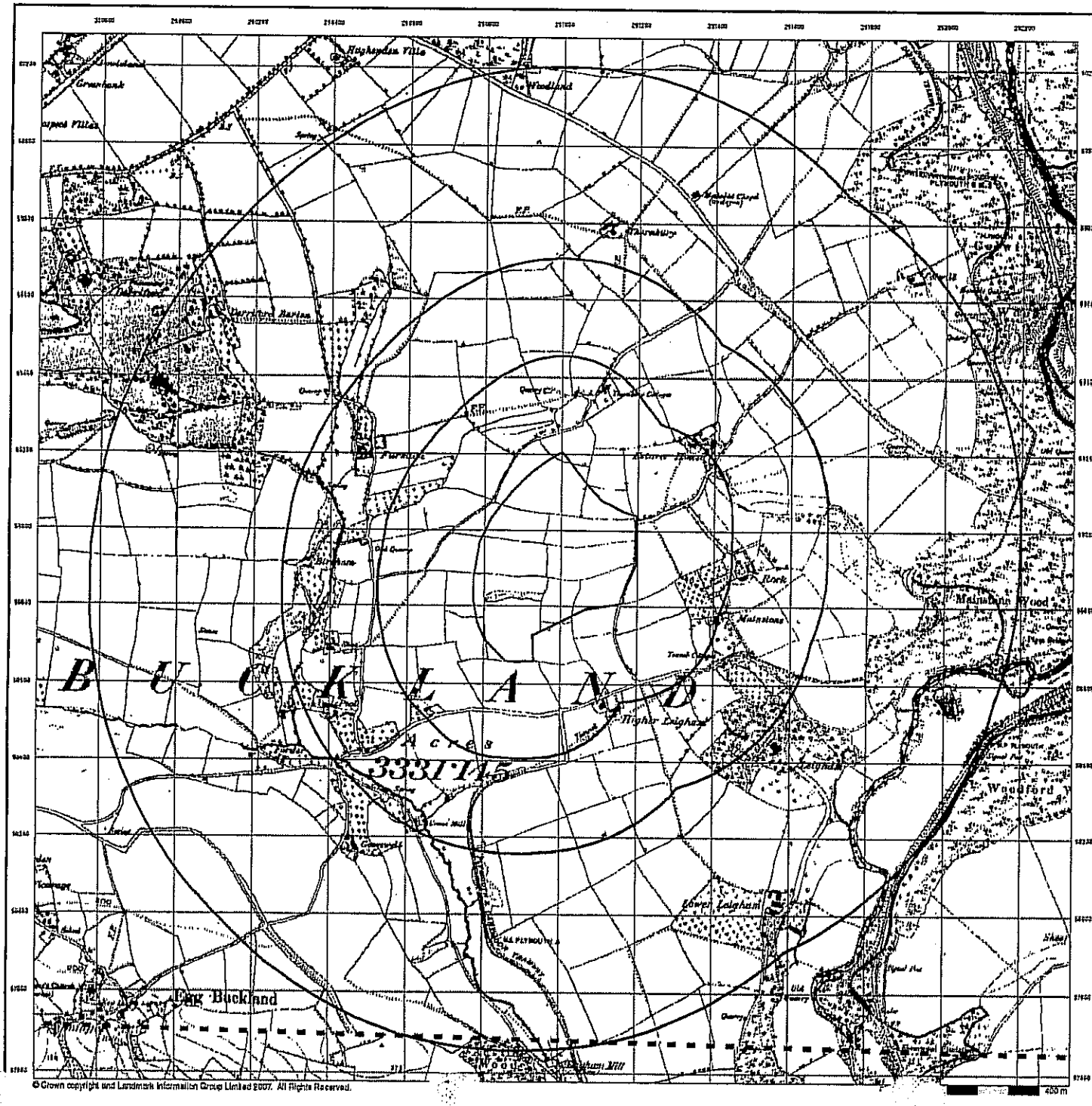
Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



FABER MAUNSELL | AECOM

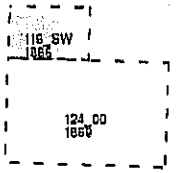
Devon

Published 1869 - 1886

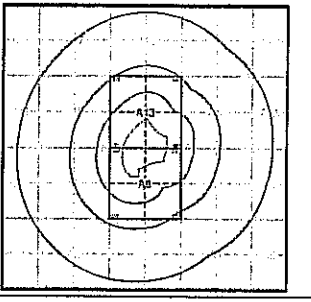
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

Site Details

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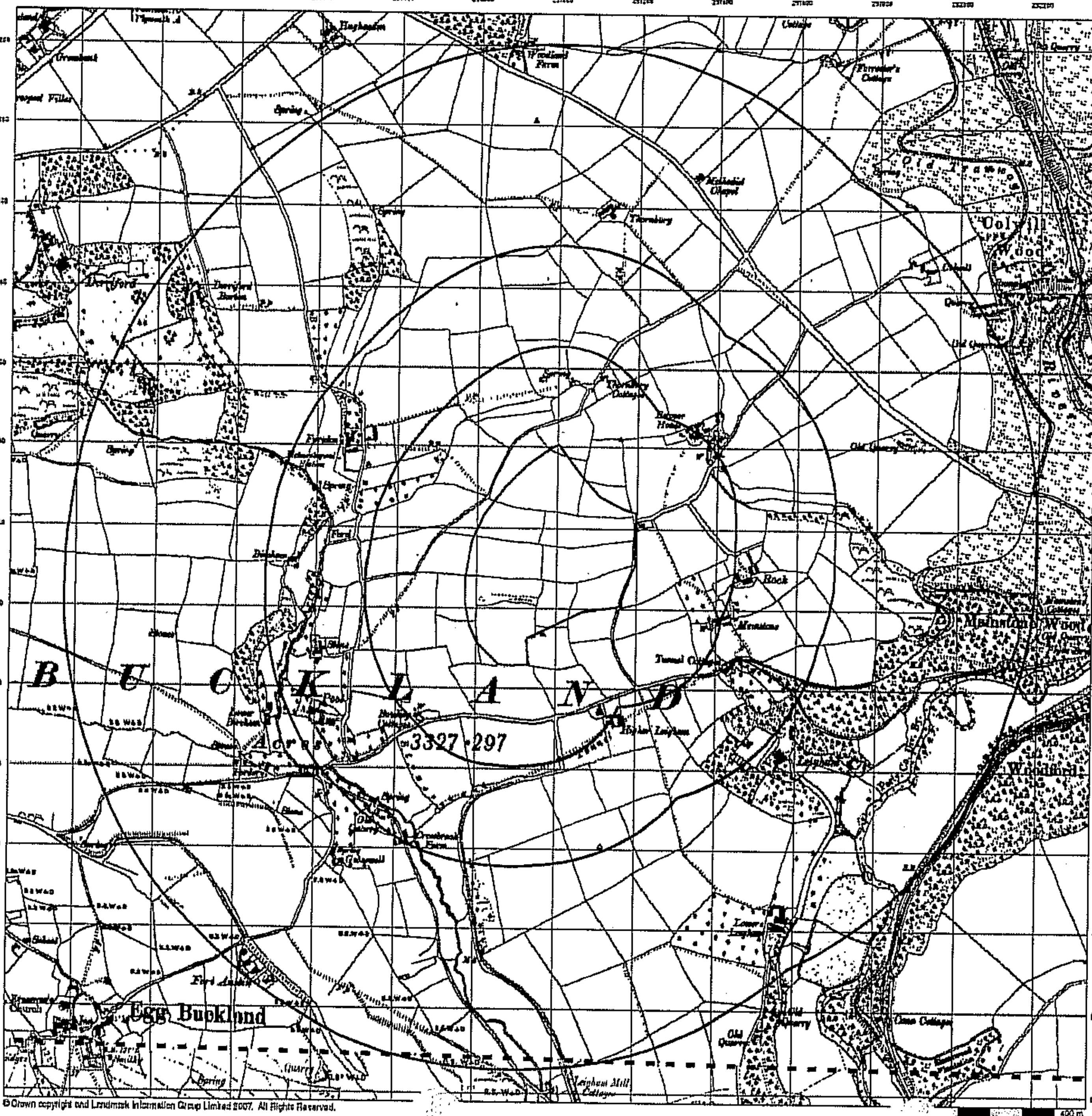

FABER MAUNSELL | AECOM

Devon

Published 1907

Source map scale - 1:10,560

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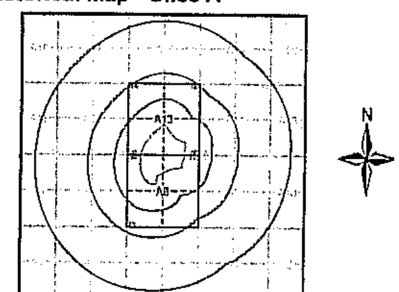
Map Name(s) and Date(s)

118_SW 1907

124_NW 1907

Historical Map - Slice A



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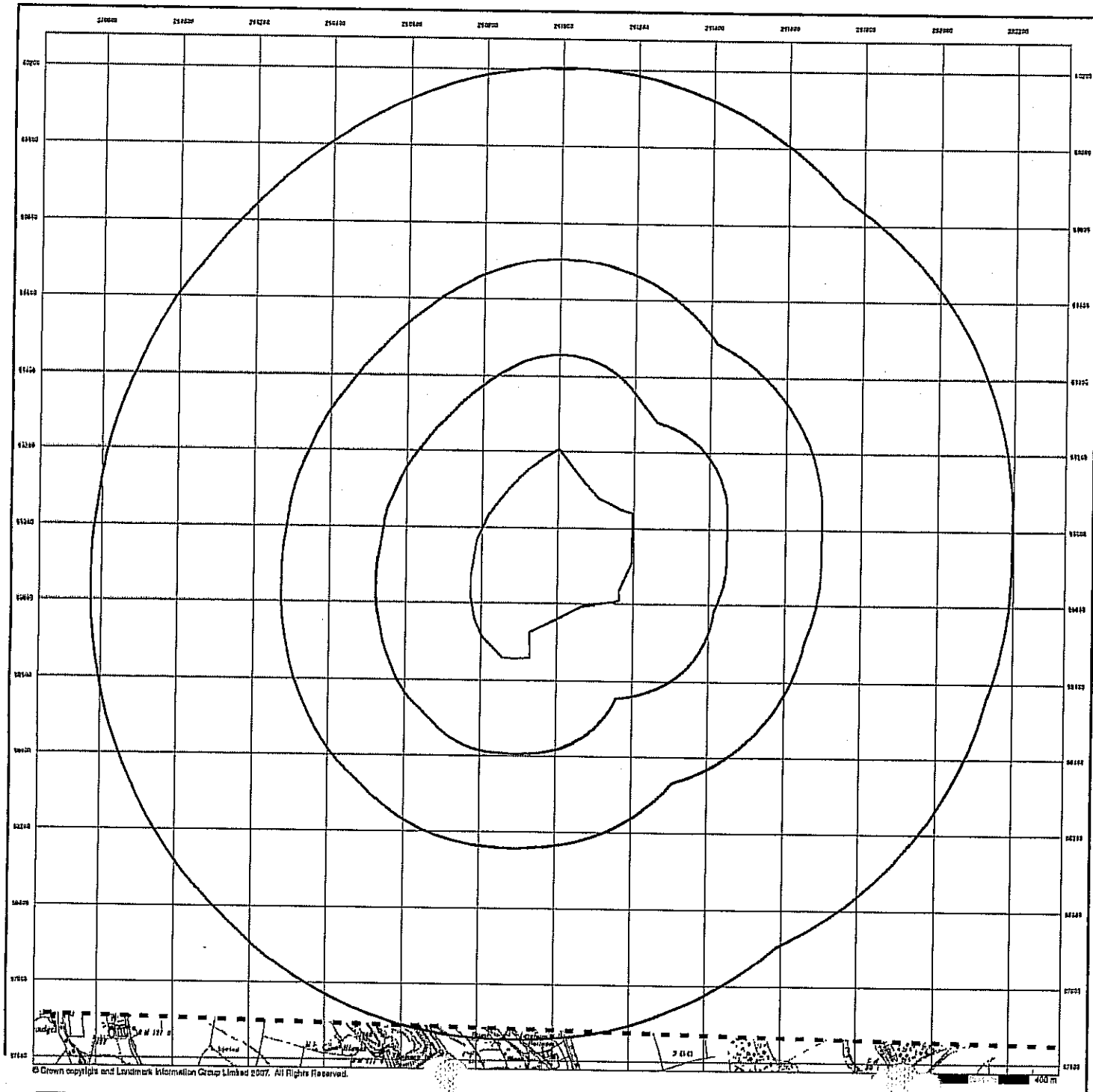
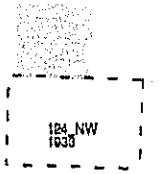


FABER MAUNSELL | AECOM

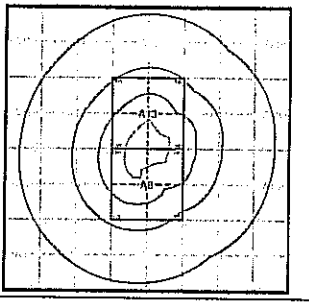
Devon
Published 1933
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1940's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1935, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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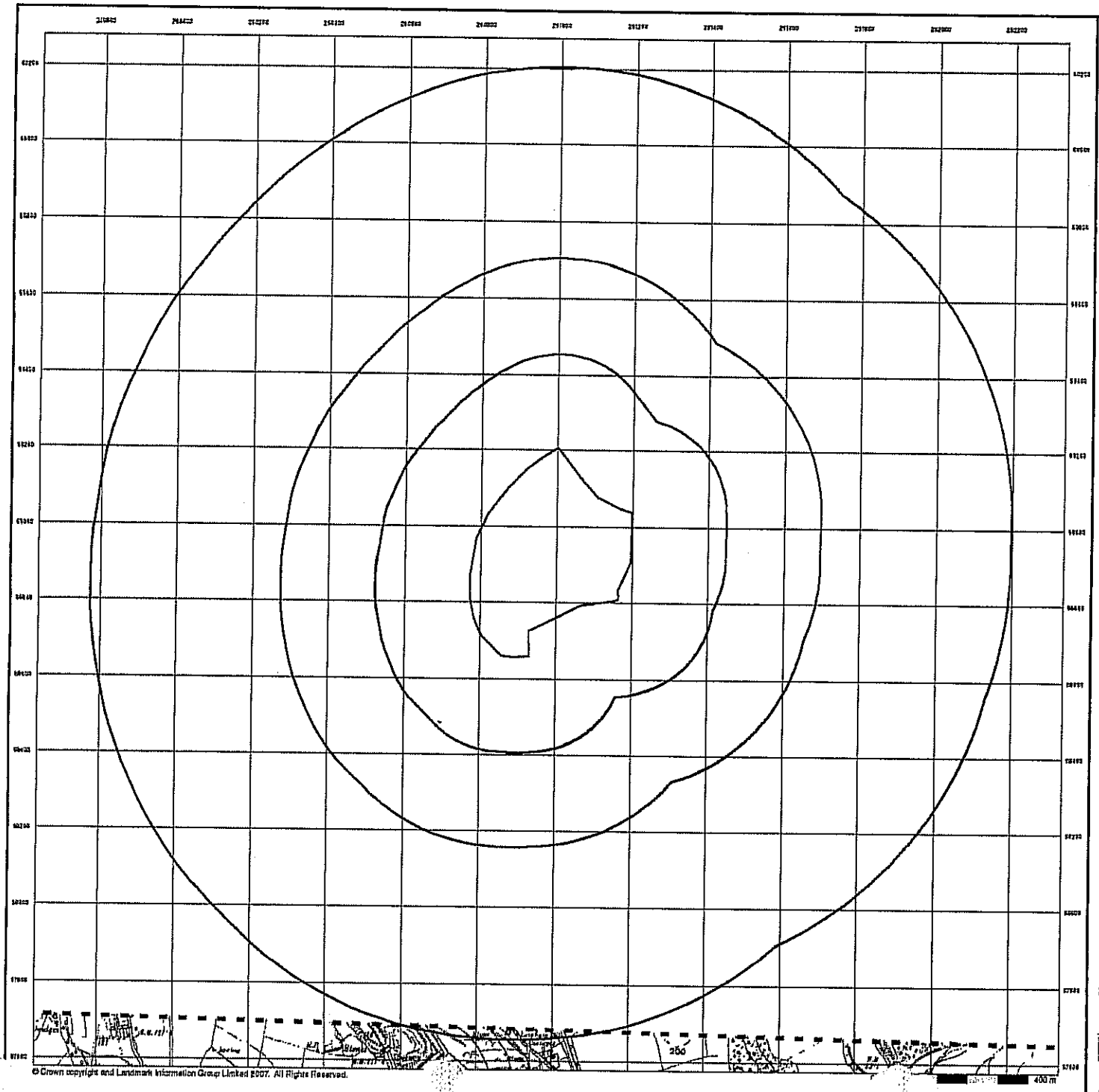

FABER MAUNSELL | AECOM

Devon

Published 1938

Source map scale - 1:10,560

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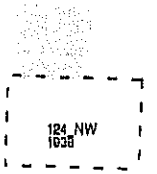
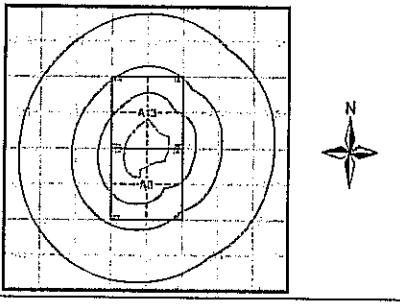
Map Name(s) and Date(s)



Historical Map - Slice A



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Ordnance Survey Plan
Published 1954
Source map scale - 1:10,560

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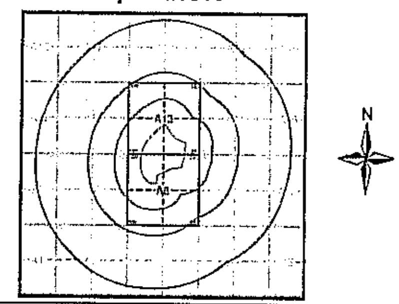
Map Name(s) and Date(s)

SX46SE 1954	SX56SW 1954
SX46NE 1954	SX56NW 1954

Historical Map - Slice A



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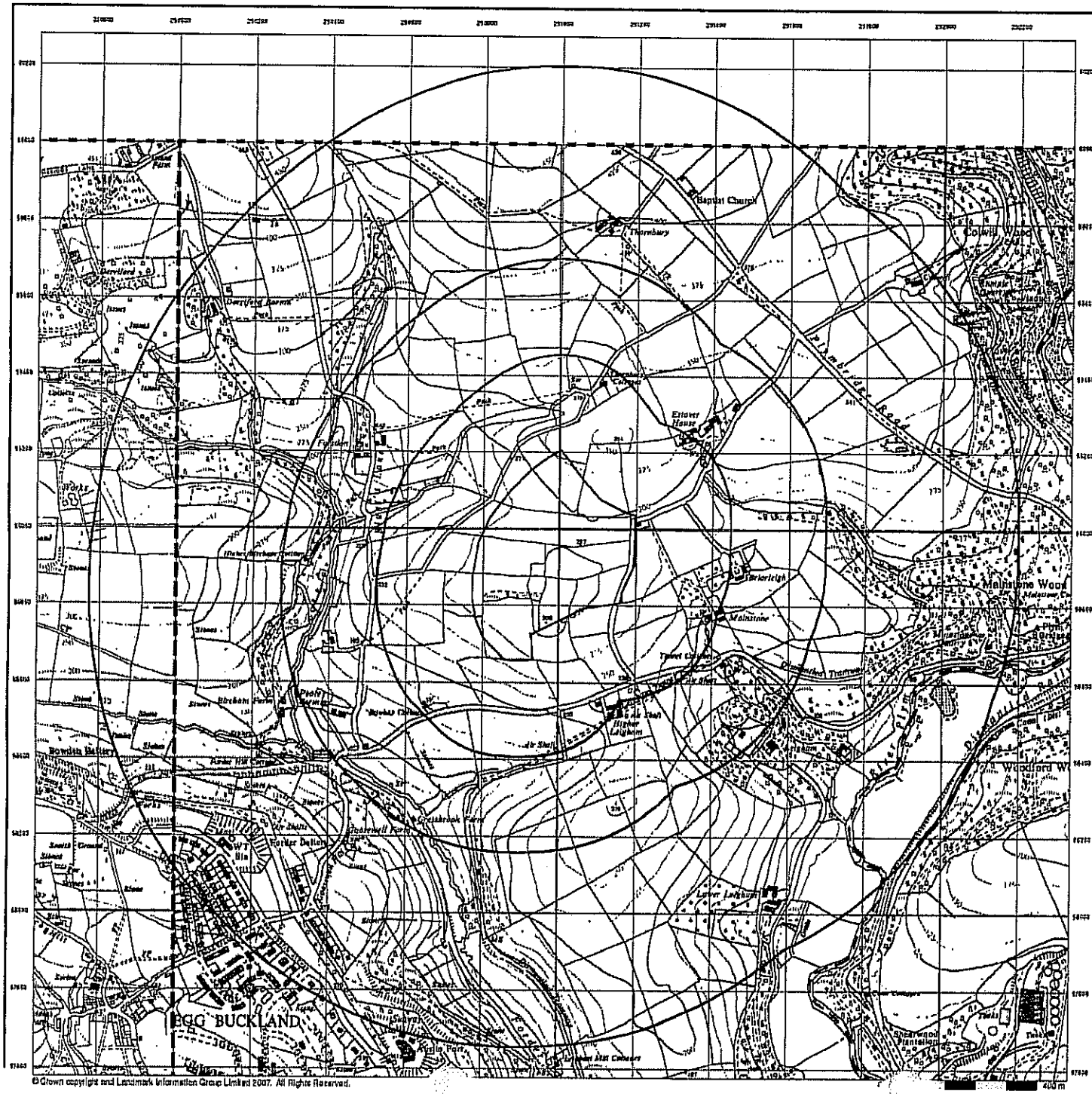

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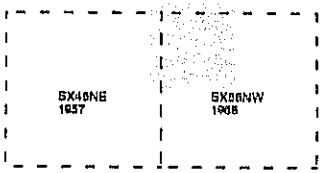
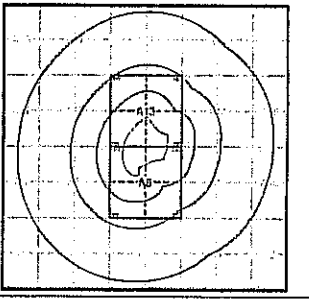
Ordnance Survey Plan
Published 1957 - 1968
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1935, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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Web: www.envirocheck.co.uk

FABER MAUNSELL | AECOM

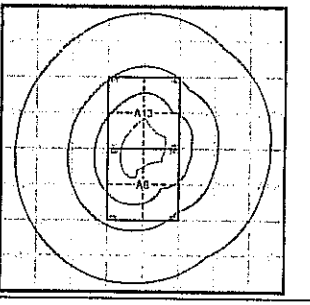
Ordnance Survey Plan
Published 1976 - 1982
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1936, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SX46SE 1976	SX56SW 1982
SX45NE 1982	SX55NW 1982

Historical Map - Slice A



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Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	1000

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Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

FABER MAUNSELL | AECOM

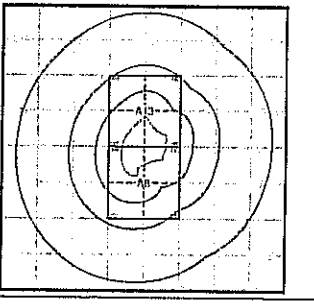
Ordnance Survey Plan
Published 1989 - 1995
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SX46SE 1989	SX56SW 1995
SX45NE 1991	SX55NW 1994

Historical Map - Slice A



Order Details

Order Number:	21330175_1_1
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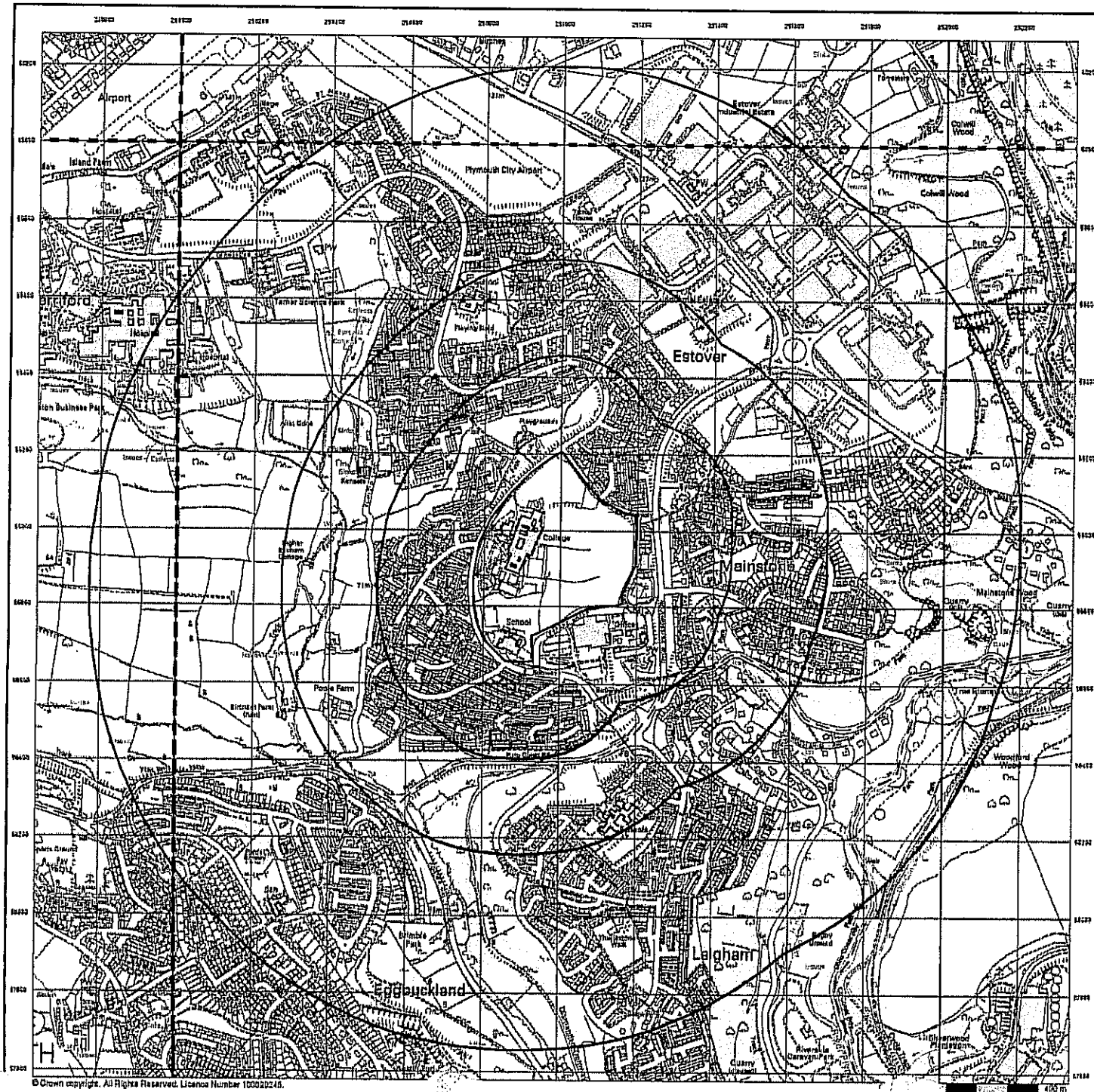


FABER MAUNSELL | AECOM

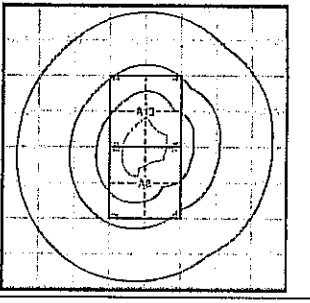
10K Raster Mapping
Published 1999
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SX48SE 1999	SX58SW 1999
SX45NE 1999	SX55NW 1999

Historical Map - Slice A



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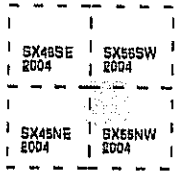
FABER MAUNSELL | AECOM

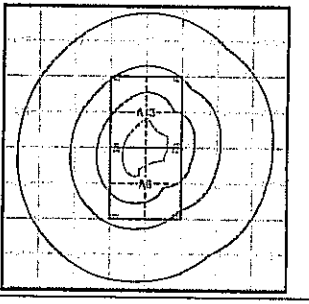
10K Raster Mapping
Published 2004
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



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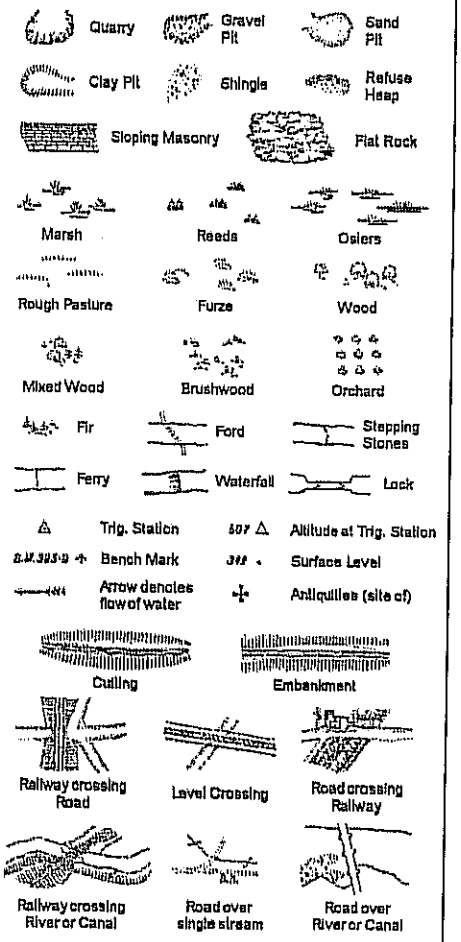
Historical Mapping Legends

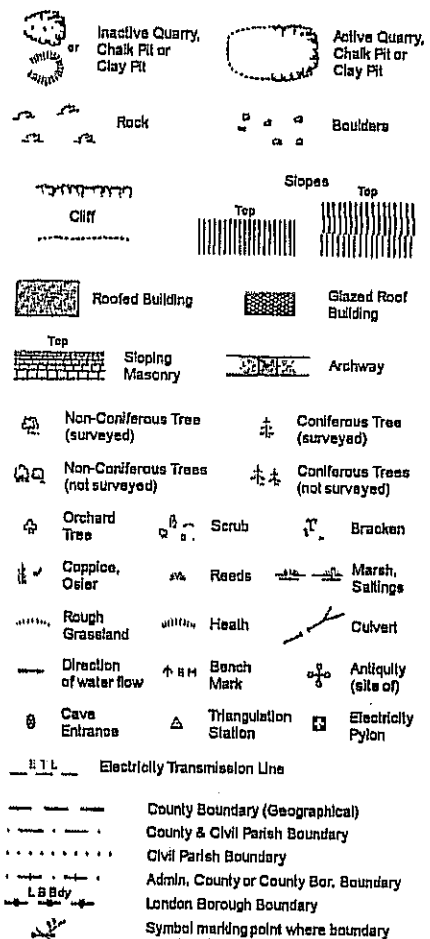
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



- County Boundary (Geographical)
- County & Civil Parish Boundary
- Administrative County & Civil Parish Boundary
- County Borough Boundary (England)
- Co. Boro. Bdy.
- County Burgh Boundary (Scotland)
- Co. Burgh Bdy.

B P B B	Boundary Post or Stone	P.C.	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl	Sluice
F.P.	Foot Path	Spr.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

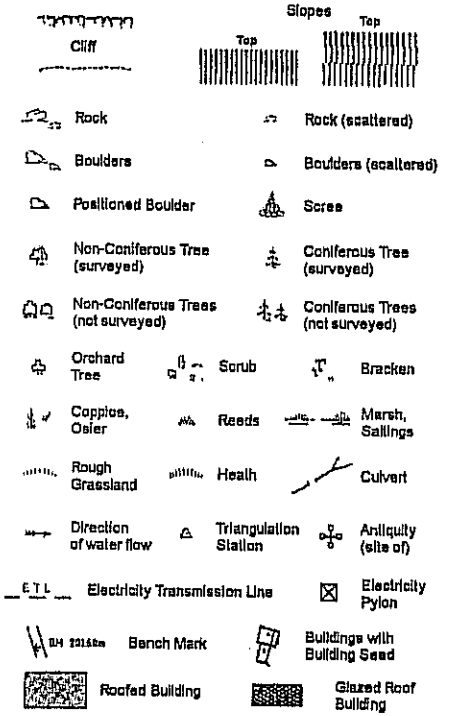
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



- County Boundary (Geographical)
- County & Civil Parish Boundary
- Civil Parish Boundary
- Admin. County or County Bor. Boundary
- L B Bdy
- London Borough Boundary
- Symbol marking point where boundary merging changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



- Civil parish/community boundary
- District boundary
- County boundary
- Boundary post/stone
- Boundary merging symbol (note: these always appear in opposed pairs or groups of three)

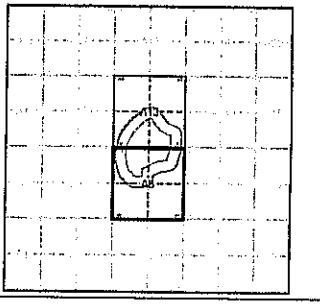
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governor	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

FABER MAUNSELL | AECOM

Ordnance Survey mapping included:

Mapping Type	Scale	Date	Pg
Devon	1:2,500	1867	2
Devon	1:2,500	1906	3
Ordnance Survey Plan	1:2,500	1951 - 1952	4
Ordnance Survey Plan	1:1,250	1971 - 1982	5
Ordnance Survey Plan	1:1,250	1983 - 1984	6
Additional SIMs	1:2,500	1988	7
Additional SIMs	1:1,250	1977 - 1992	8
Large-Scale National Grid Data	1:1,250	1992	9
Large-Scale National Grid Data	1:1,250	1993	10
Large-Scale National Grid Data	1:1,250	1994	11

Historical Map - Segment A8



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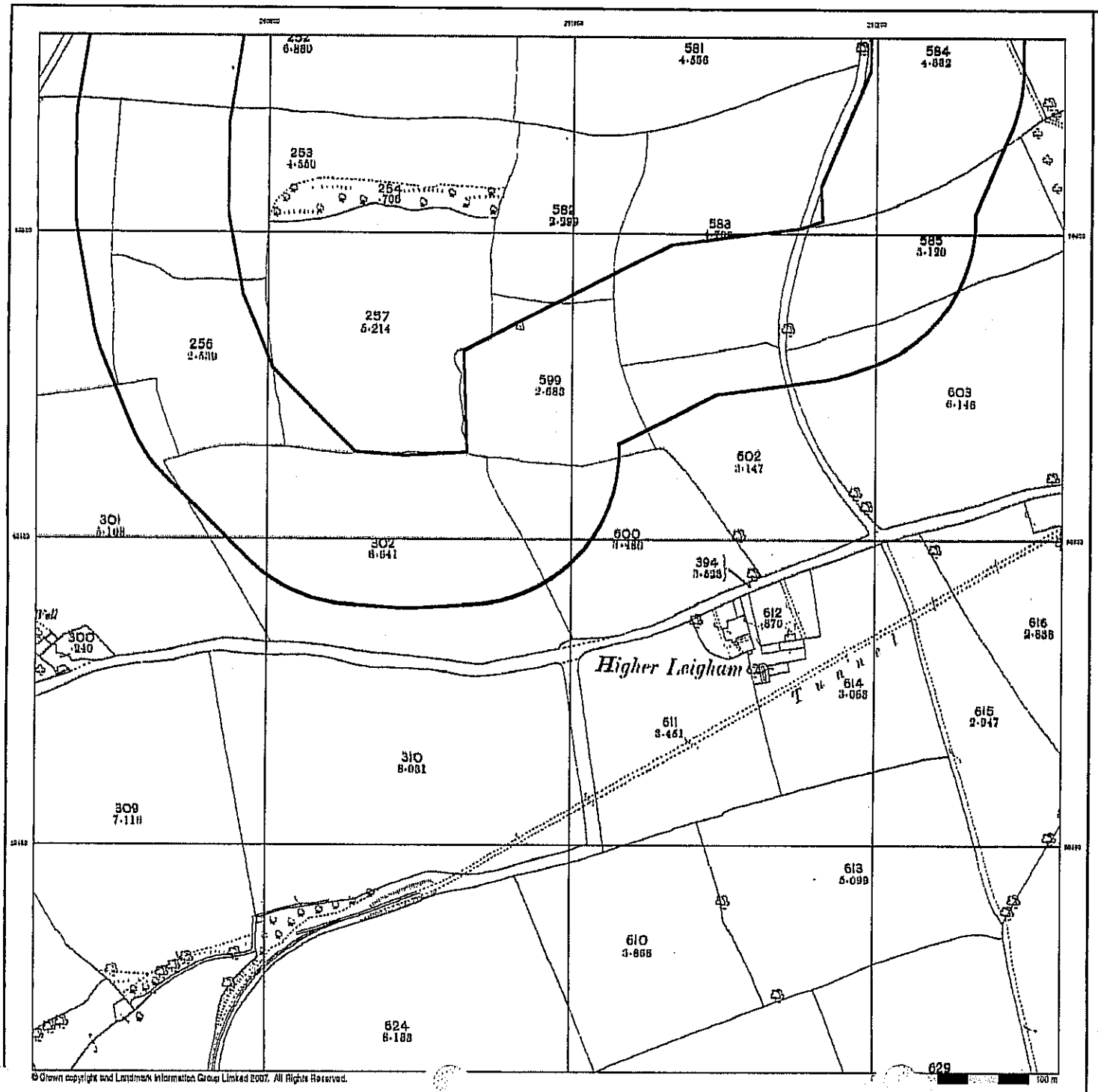


FABER MAUNSELL | AECOM

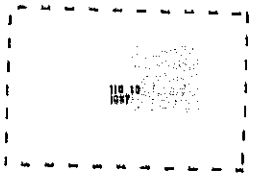
Devon

Published 1867

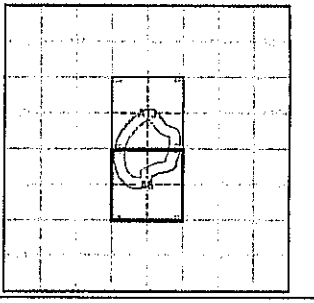
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1935, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A8



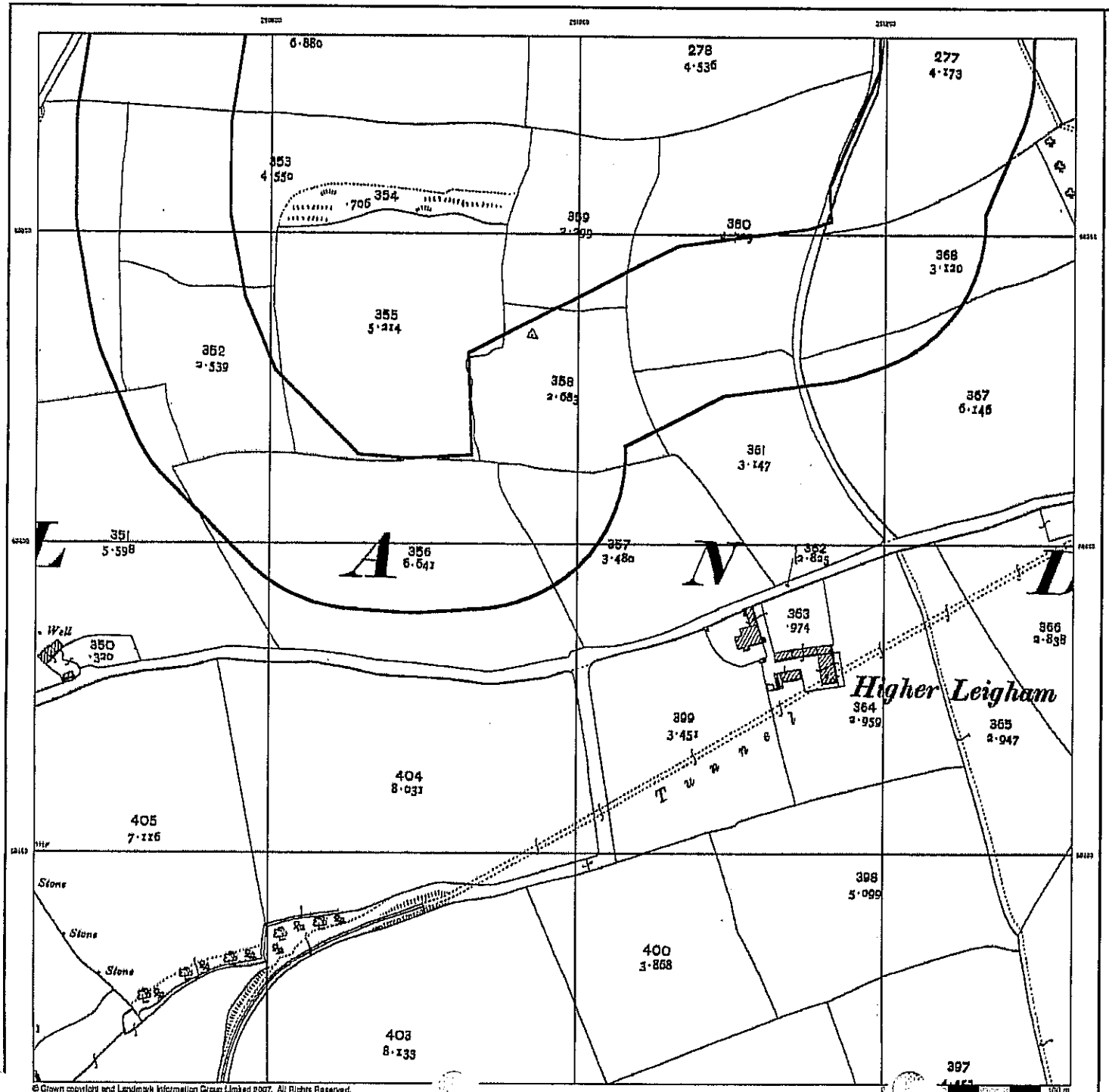
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.environcheck.co.uk



FABER MAUNSELL | AECOM

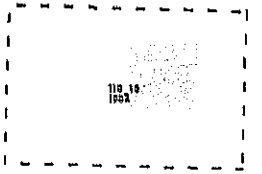
Devon

Published 1906

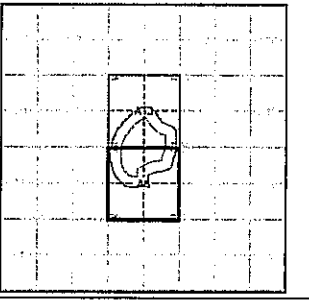
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A8



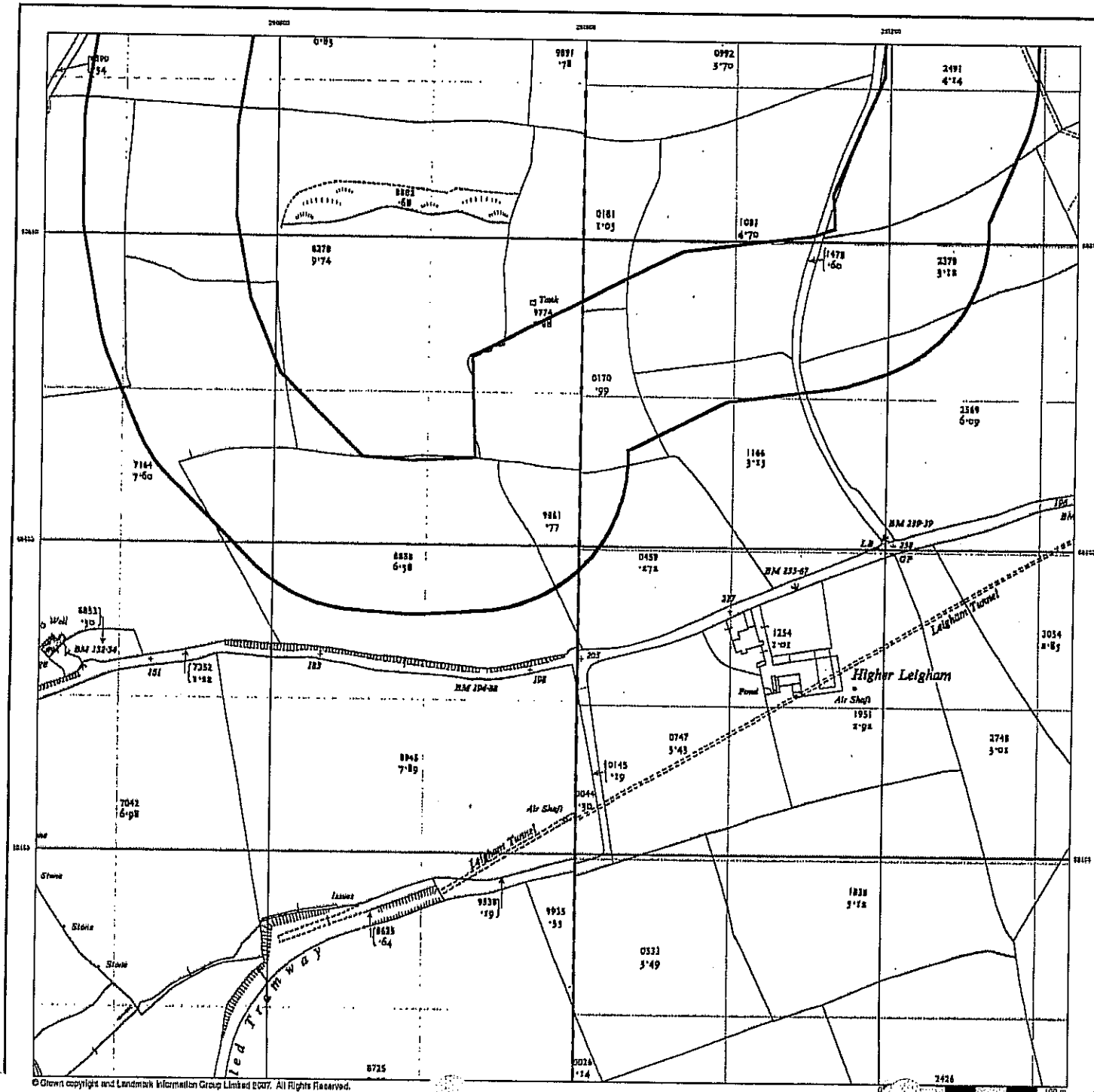
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6870
Fax: 0870 850 6871
Web: www.envirocheck.co.uk

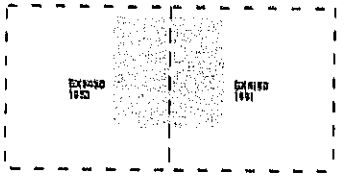


FABER MAUNSELL | AECOM

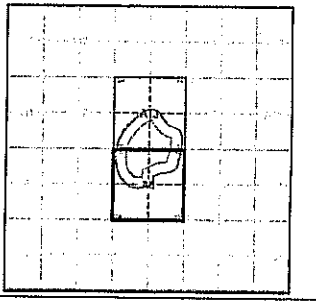
Ordnance Survey Plan
Published 1951 - 1952
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A8



Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
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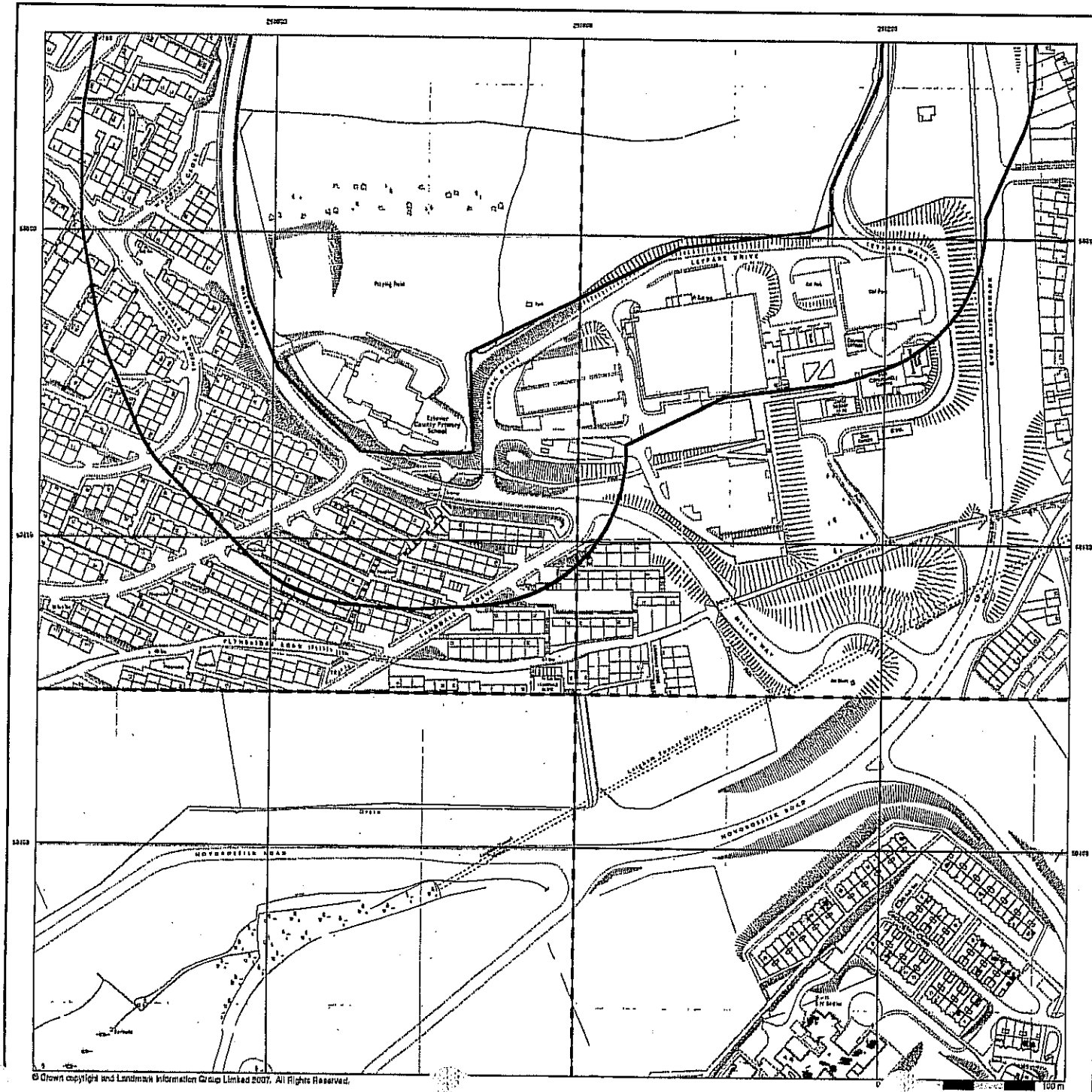
Web: www.envirocheck.co.uk

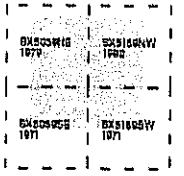


FABER MAUNSELL | AECOM

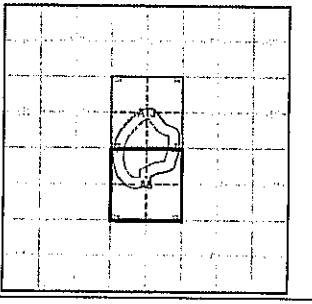
Ordnance Survey Plan
Published 1971 - 1982
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1890 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A8

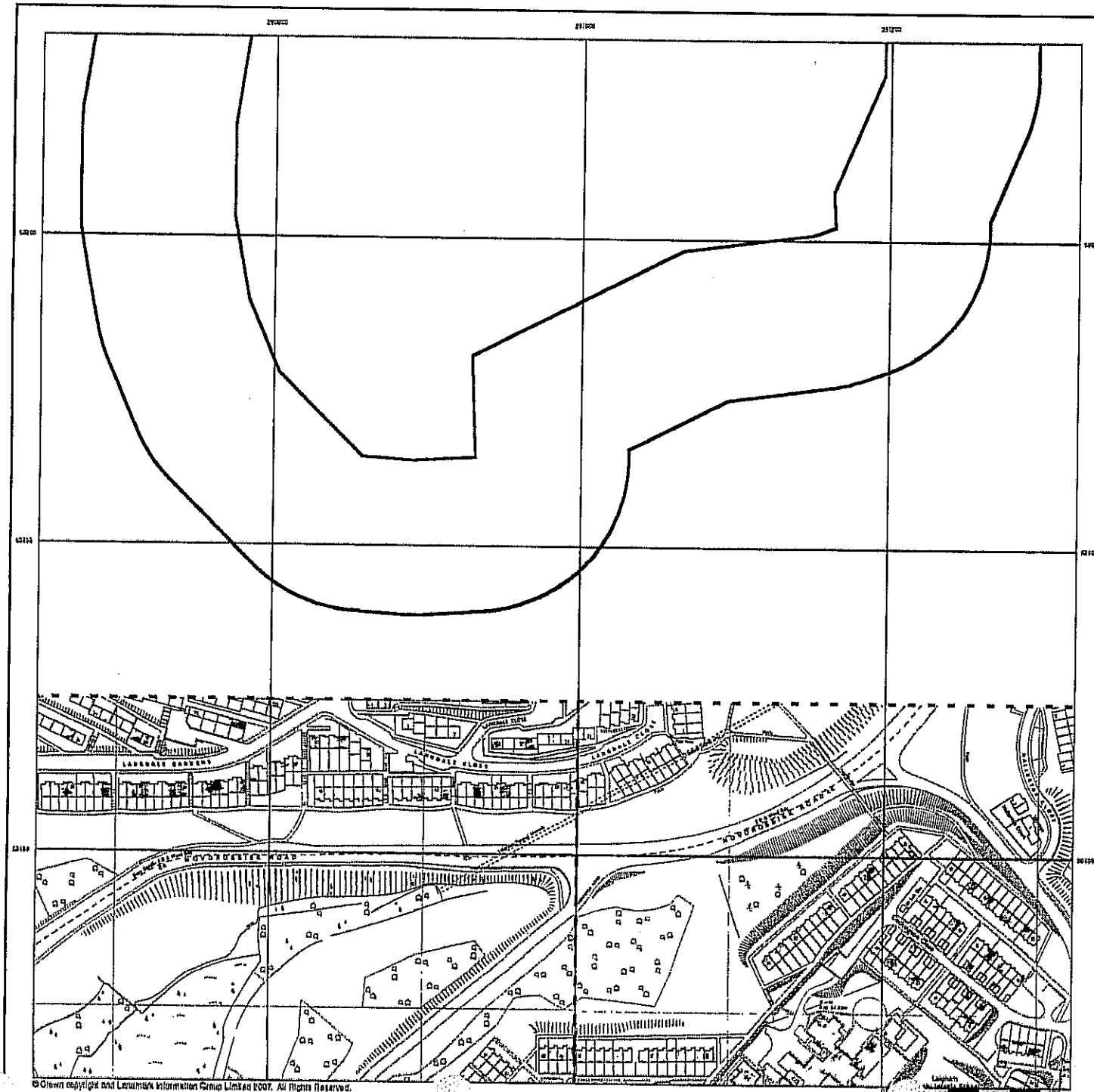


Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

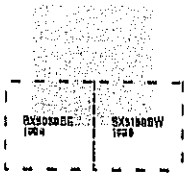


FABER MAUNSELL | AECOM

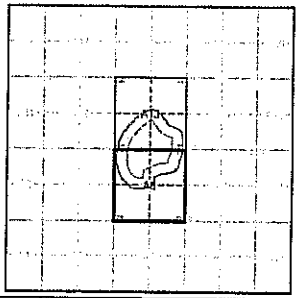
Ordnance Survey Plan
Published 1983 - 1984
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1886 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A8



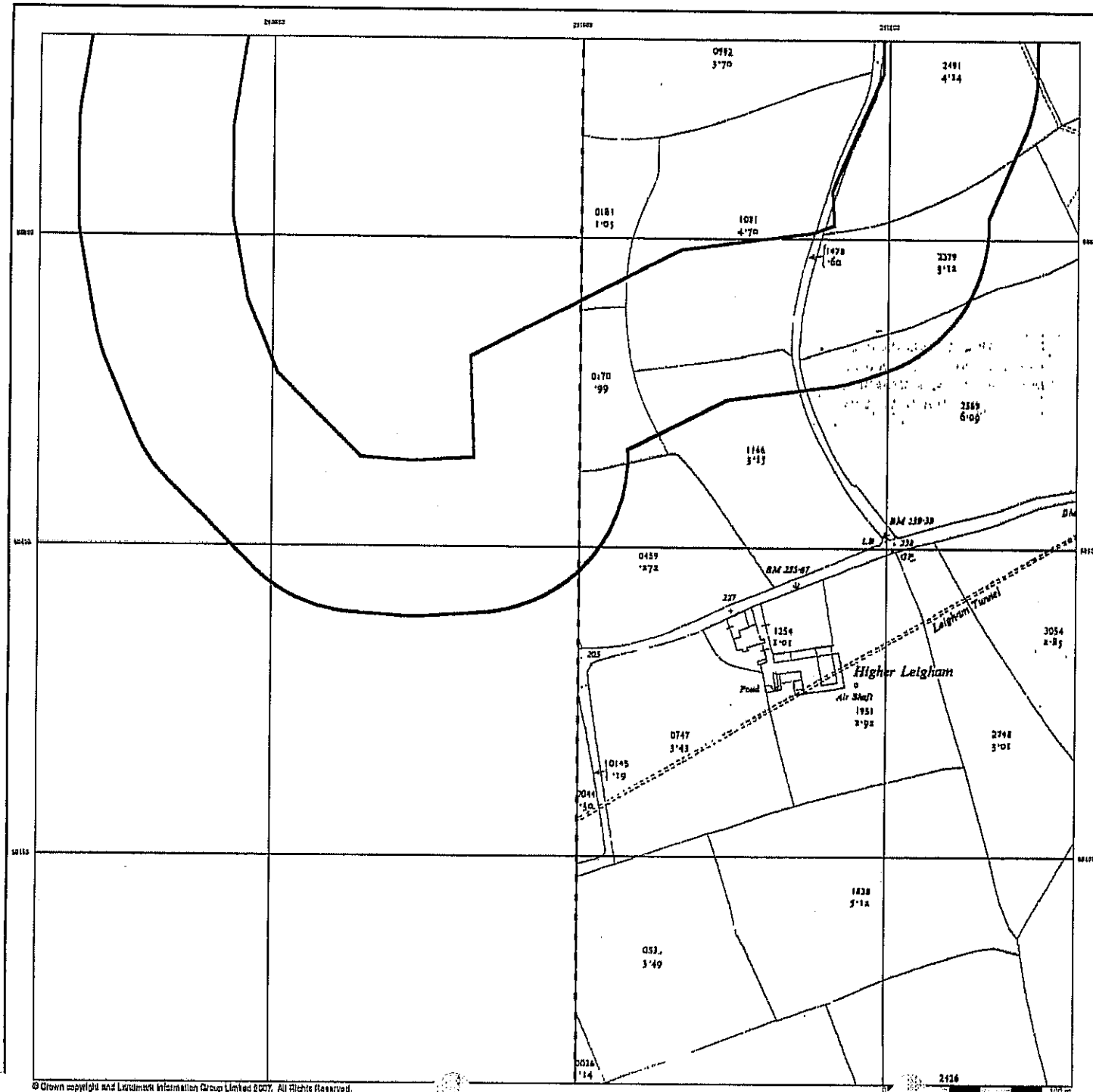
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

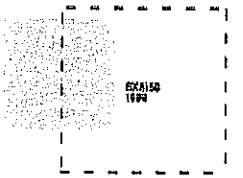


FABER MAUNSELL | AECOM

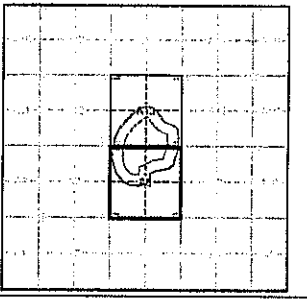
Additional SIMs
Published 1988
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A8



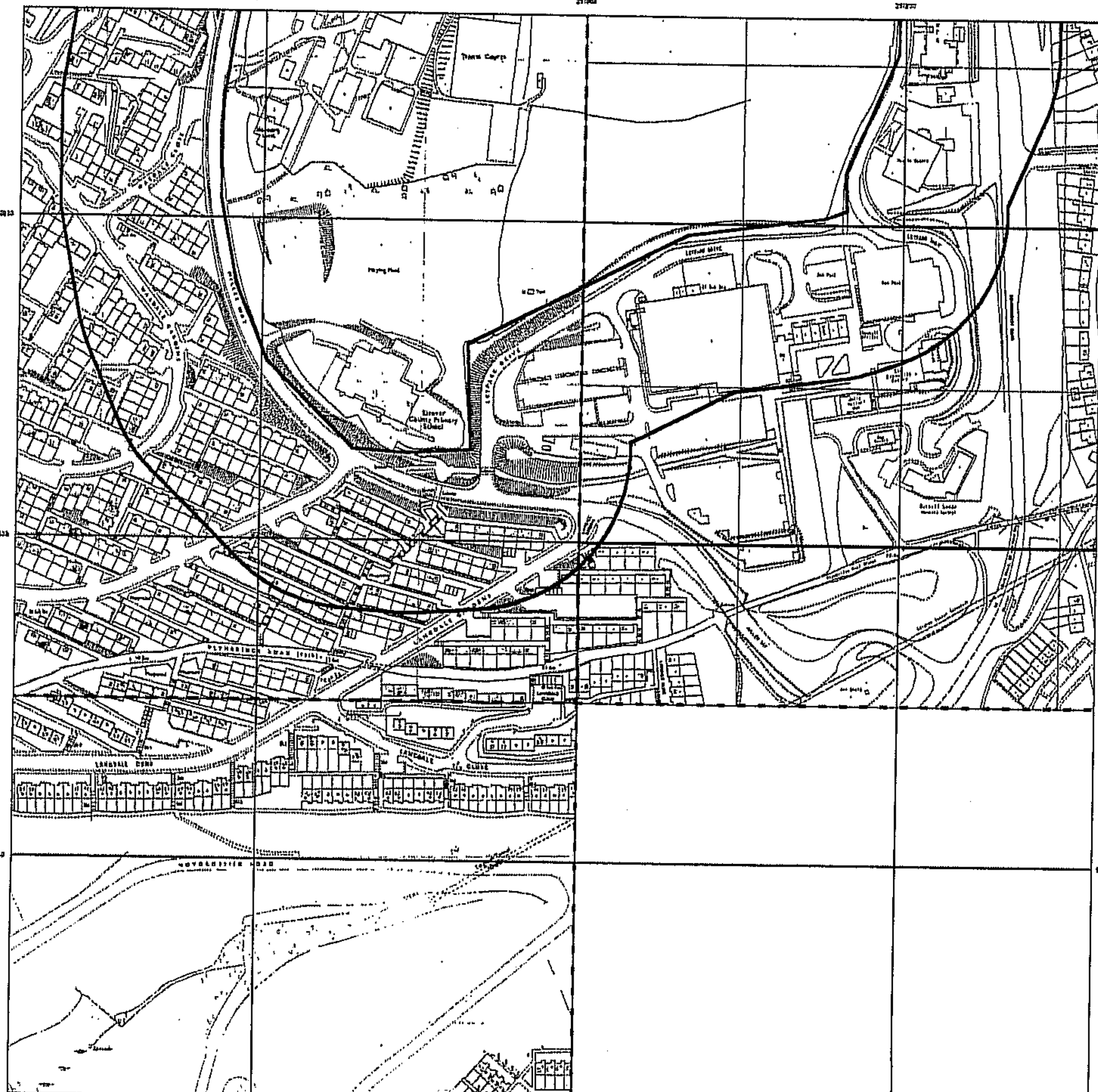
Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6570
Fax: 0870 850 6571
Web: www.envirocheck.co.uk



FABER MAUNSELL | AECOM

Additional SIMs

Published 1977 - 1992

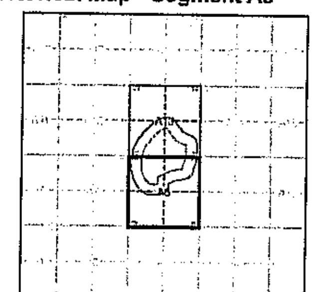
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1991, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SX5058NE 1992 | SX5158NW 1992
SX5058SE 1977

Historical Map - Segment A8



Order Details

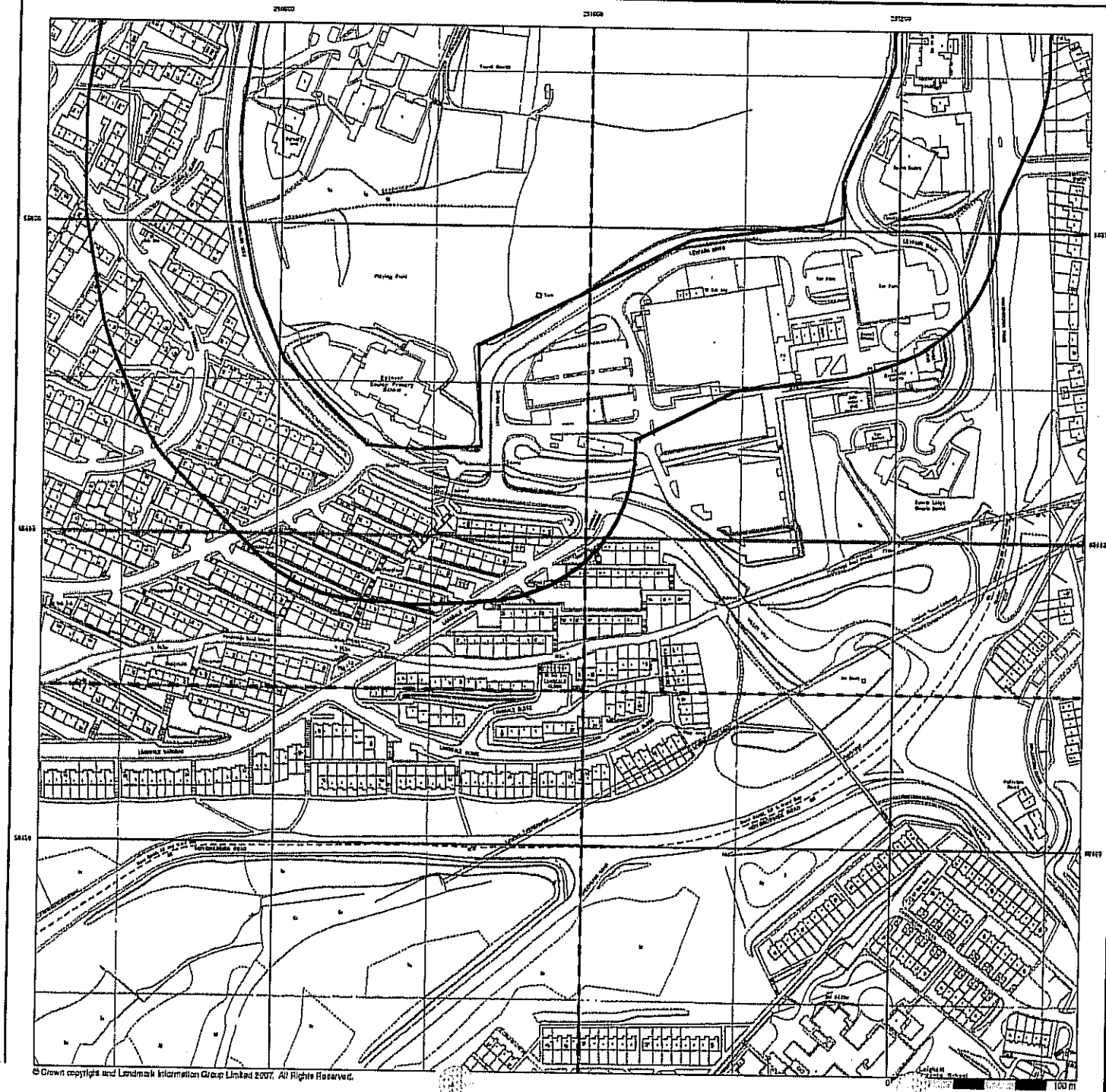
Order Number: 21330175_1_1
Customer Ref: Estover College
National Grid Reference: 250980, 58920
Sheet: A
Site Area (Ha): 14.81
Search Buffer (m): 100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group

Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

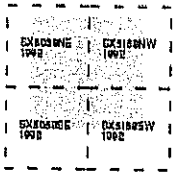


FABER MAUNSELL | AECOM

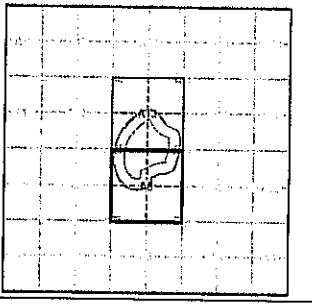
Large-Scale National Grid Data
Published 1992
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A8

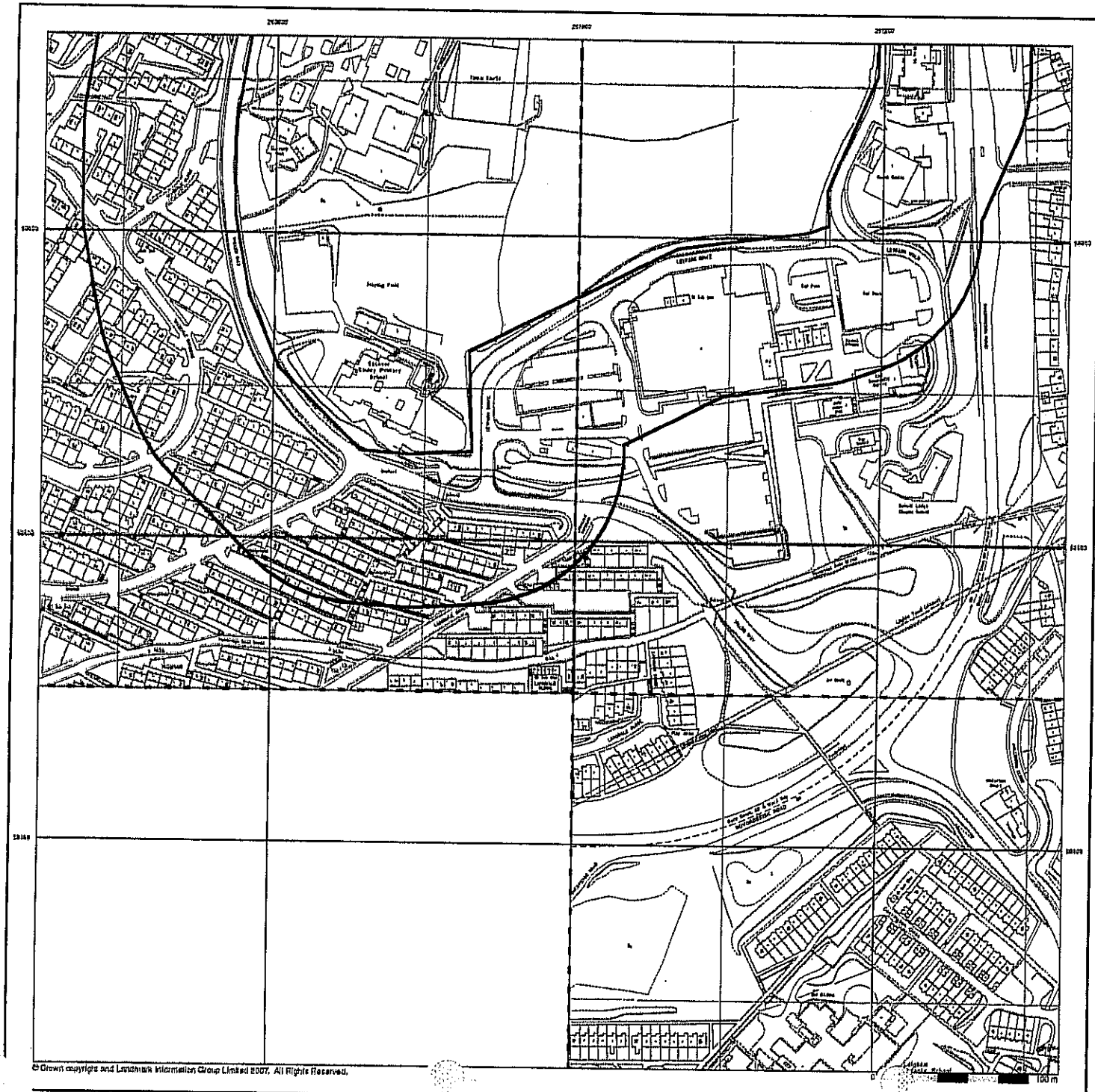


Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN



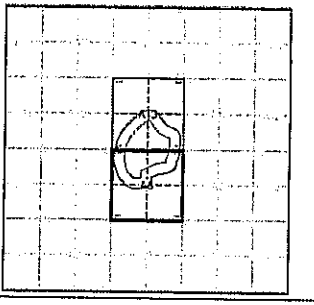
FABER MAUNSELL | AECOM

Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A8



Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.81
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6070
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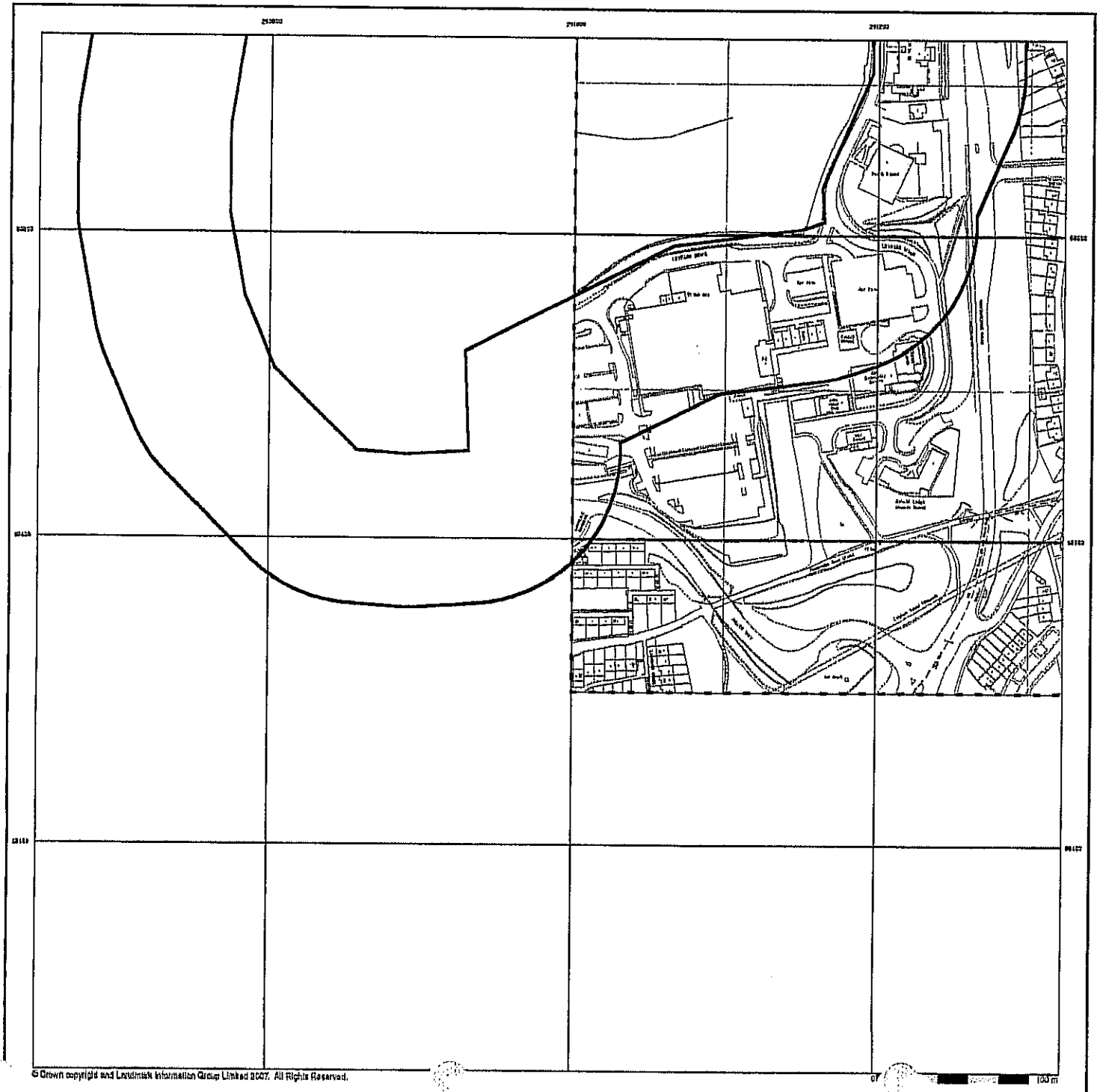
Web: www.envirocheck.co.uk



FABER MAUNSELL | AECOM

Large-Scale National Grid Data

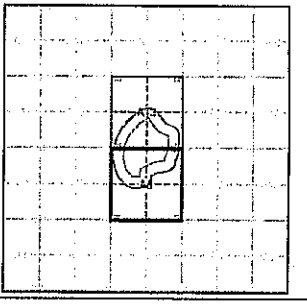
Published 1994

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A8



Order Details

Order Number:	21330175_1_1
Customer Ref:	Estover College
National Grid Reference:	250980, 58920
Sheet:	A
Site Area (Ha):	14.61
Search Buffer (m):	100

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- 28 Government and Administrative Buildings
- 17 Military and Industrial Buildings
- 35 Military and Communication Areas
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation
- 243,8 Values for prominent elevations
- 186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
- 0,2 Velocity of the current, width of river bed, depth of river
- Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (--)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- 28 Government and Administrative Buildings
- 17 Military and Industrial Buildings
- 35 Military and Communication Areas
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Telegraph/Telephone Lines
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Dresden and velocity of current
- Water Level Mark
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Conifer
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

SX55NW_Plymouth

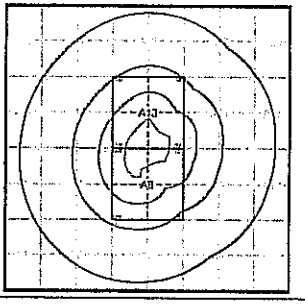
No.	Description
41	Factory (Tube Rolling)
93	Tunnel (Railway)

FABER MAUNSELL | AECOM

Russian Military Mapping included:

Mapping Type	Scale	Date	Pg
Plymouth	1:10,000	1981	2

Russian Map - Slice A



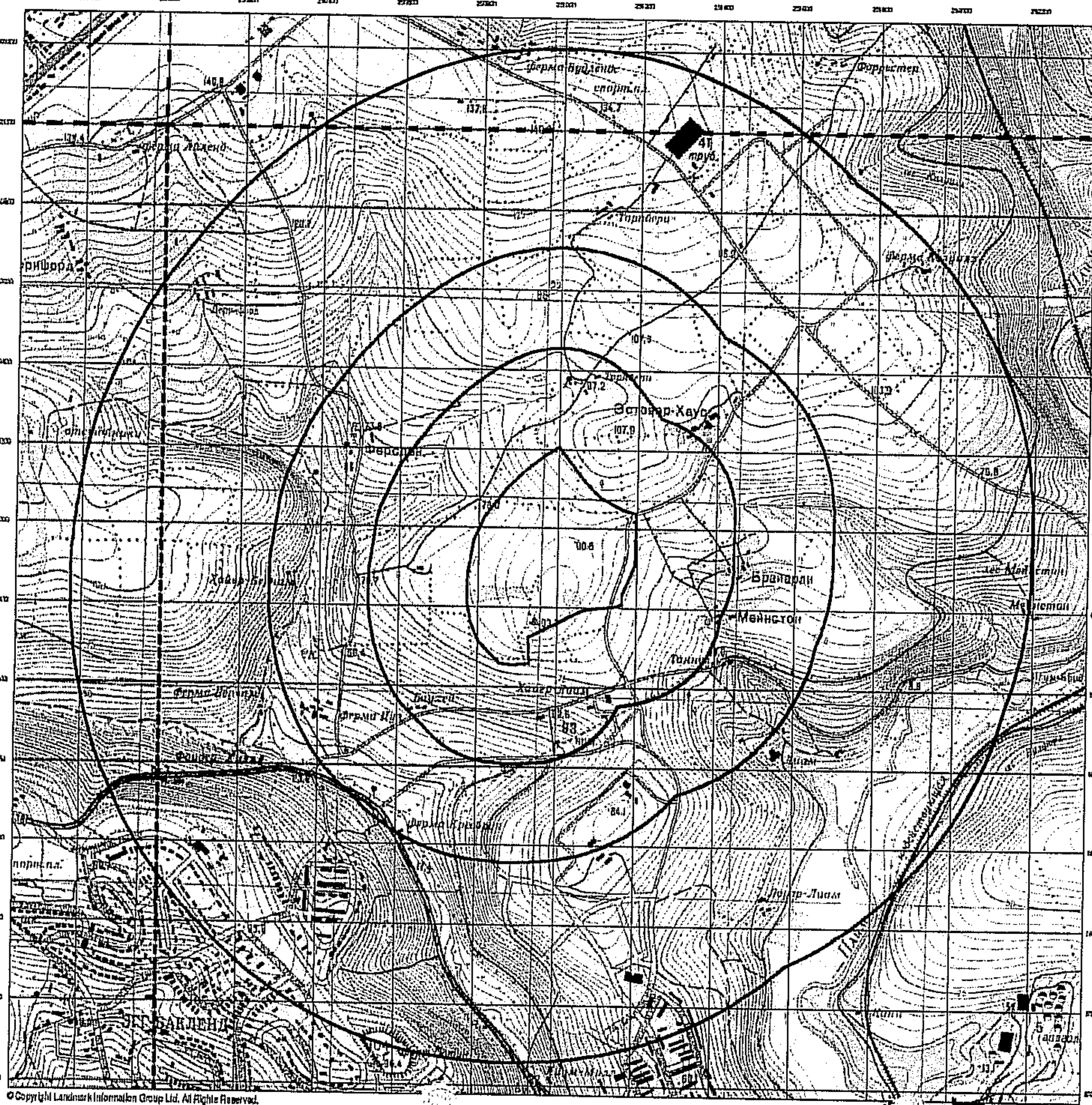
Order Details

Order Number: 21330175_1_1
Customer Ref: Estover College
National Grid Reference: 250980, 58920
Sheet: A
Site Area (Ha): 14.81
Search Buffer (m): 1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



FABER MAUNSELL | AECOM

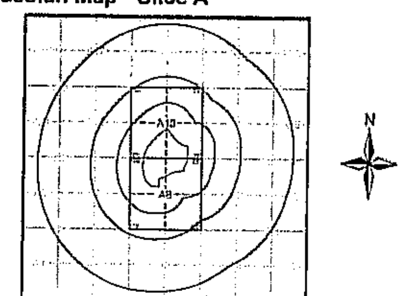
Plymouth
Published 1981
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

SX465E 1981	SX565W 1981
SX45NE 1981	SX55NW 1981

Russian Map - Slice A



Order Details

Order Number: 21330175_1_1
Customer Ref: Estover College
National Grid Reference: 250980, 56920
Sheet: A
Site Area (Ha): 14.81
Search Buffer (m): 1000

Site Details

Estover Community College, Miller Way, PLYMOUTH, PL6 8UN

LANDMARK Information Group

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Geotechnical Engineering Limited

BOREHOLE LOG

BH01

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

PRELIMINARY

Start Date 18 April 2007

End Date 18 April 2007

Sheet 1 of 1

Scale 1 : 50

Depth 4.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
18/04/07 0800hrs	1B	0.10							TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.40		
	2B	0.60							Soft brown sandy CLAY with much subangular fine to coarse gravel of mudstone and siltstone.	1.00		
	3D 4X	1.20 - 1.65 1.20 - 2.20		nil	S 23				Very weak orange-brown and grey MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles.			
	5D 6C	2.20 - 2.65 2.20 - 3.00		nil	S 50	75 0 0	NI		Very weak very closely cleaved interlaminated orange-brown and grey micaceous MUDSTONE and SILTSTONE recovered as slightly clayey sandy subangular fine to coarse gravel and cobbles.	2.20		
	7C	3.00 - 4.50				100 90 0				3.60		
18/04/07 1100hrs 2.85m							NI 10 15		Very weak becoming weak very closely randomly orientated cleaved interlaminated orange-brown and grey MUDSTONE and SILTSTONE with rare clay laminate. Fractures are extremely closely and very closely spaced subhorizontal irregular stepped open clean with orange-brown discoloured fracture planes, and closely spaced inclined up to 60° planar rough light.	4.50		
		4.50 - 4.73		3.00	C*136				Borehole completed at 4.50m.	(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-2.20m. Waterflush rotary core drilled (116mm) 2.20-4.50m.

CASING: 143m diam to 3.00m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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Geotechnical Engineering Limited

BOREHOLE LOG

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 18 April 2007

End Date 18 April 2007

BH03

Sheet 1 of 1

Scale 1 : 50

Depth 4.50 m

progress date/time water depth	sample no & type	depth (m) from	to	casing depth (m)	test type & value	samp. /core range	Ir	instru -ment	description	depth (m)	reduced level (m)	legend
18/04/07 1100hrs	1B	0.10							TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.40		
	2B	0.60							Soft brown sandy CLAY with much subangular fine to coarse gravel of mudstone and siltstone.	0.60		
	3D 4X	1.20 1.20 - 2.20		nil	S 23				Very weak cleaved orange-brown and grey MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles. 1.60m: Becoming green-brown.			
	5D 6C	2.20 - 2.61 2.20 - 3.00		nil	S*58	63 0 0	NI		Very weak very closely cleaved orange-brown and grey MUDSTONE and SILTSTONE recovered as angular and subangular fine to coarse gravel and cobbles.	2.20		
	7C	3.00 - 4.50		2.20	C*333	100 98 12	NI 20 50		Weak becoming moderately weak closely cleaved up to 60° interbedded red-brown mottled black MUDSTONE and SILTSTONE. Fractures are extremely closely and very closely spaced subhorizontal planar and stepped tight, and inclined (up to 60°) and subvertical undulating stepped tight and open <2mm with a little gravel infill. 3.00 - 3.20m: Mottled black.	2.80		
18/04/07 1400hrs 3.10m												
		4.50 - 4.62							Borehole completed at 4.50m.	4.50		
										(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-2.20m. Waterflush rotary core drilled (116mm) 2.20-4.50m.

CASING: 143m diam to 2.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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Geotechnical Engineering Limited

BOREHOLE LOG

BH04

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 17 April 2007

End Date 17 April 2007

Sheet 1 of 1

Scale 1 : 50

Depth 2.80 m

progress date/time water depth	sample no & type	depth (m) from	to	casing depth (m)	test type & value	samp. /core range	fr	instru -ment	description	depth (m)	reduced level (m)	legend
17/04/07 0800hrs	1B	0.10	0.60						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.20		
	2X	0.60	1.20						Very weak orange-brown and grey cleaved MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles.			
	3D	1.20	1.41	1.20	S*264					1.20		
	4C	1.20	2.80			100 100 8	NI 60 100		Moderately weak very closely cleaved up to 60° interbedded purple and orange brown MUDSTONE and SILTSTONE with rare randomly orientated quartz veining. Fractures are very closely locally extremely closely spaced subhorizontal irregular rough tight and open<2mm, and closely spaced inclined up to 60° planar rough tight. 1.30 - 2.10m: Predominantly subhorizontal fractures. 2.10 - 2.80m: Predominantly inclined fractures.			
17/04/07 1200hrs 1.65m												
		2.80	2.96	1.20	C*231				Borehole completed at 2.80m.	2.80		
										(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-0.60m. Dynamic sampled (128mm) 0.60-1.20m. Waterflush rotary core drilled (116mm) 1.20-2.80m.

CASING: 143m diam to 1.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

CONTRACT	CHECKED
20353	

Geotechnical Engineering Limited

BOREHOLE LOG

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 18 April 2007

End Date 18 April 2007

BH05

Sheet 1 of 1

Scale 1 : 50

Depth 4.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	Instru -ment	description	depth (m)	reduced level (m)	legend
18/04/07 1400hrs	1B	0.10	0.60						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.20		
	2B	0.60	1.20						Very weak orange-brown and grey MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles.	0.60		
	3D	1.20	1.65	nil	S 43		NI					
	4C	1.20	2.70			74 40 0			Very weak very closely cleaved up to 60° red-brown and purple interbedded MUDSTONE and SILTSTONE locally recovered NI with occasional thick laminations of orange-brown clay and a little subangular quartz gravel. Fractures are extremely closely spaced randomly orientated.	1.50		
							NI 40 120		Very weak becoming weak very closely cleaved up to 65° interlaminated micaceous MUDSTONE and SILTSTONE with rare clay laminate. Fractures are very closely and closely spaced subvertical and inclined 65° planar and stepped rough tight with secondary quartz veining, and open <2mm with clay smearing and black mottling on fracture planes. 2.85 - 2.95m: Very weak and dark brown. 3.00m: Becoming moderately weak grey-green with much secondary quartz veining.			
	5C	2.70	4.30	1.20		100 90 14						
18/04/07 1800hrs 2.15m												
		4.30	4.37	1.20	C*429				Borehole completed at 4.30m.	4.30		
										(6.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Waterflush rotary core drilled (116mm) 1.20-4.30m.

CASING: 143m diam to 1.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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Geotechnical Engineering Limited

BOREHOLE LOG

BH06

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 19 April 2007

End Date 19 April 2007

PRELIMINARY

Sheet 1 of 1

Scale 1 : 50

Depth 4.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/07 0800hrs	1B	0.10	0.60						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.35		
	2B	0.60	1.20						Very weak grey-green and purple MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles.	1.20		
	3D	1.20	1.65	nil	S 38							
	4C	1.20	2.70	1.20		100 32 0	NI NI 30 120		Very weak becoming weak very closely cleaved up to 60° interbedded grey-green and purple MUDSTONE and SILTSTONE locally recovered NI. Fractures are very closely locally closely spaced inclined up to 60° undulating rough tight with black staining and rare quartz veining.			
	5C	2.70	4.30			100 100 20						
19/04/07 1100hrs 2.35m												
		4.30	4.36	1.20	C*429				Borehole completed at 4.30m.	(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Waterflush rotary core drilled (116mm) 1.20-4.30m.

CASING: 143m diam to 1.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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Geotechnical Engineering Limited

BOREHOLE LOG

BH07

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 19 April 2007

End Date 19 April 2007

Sheet 1 of 1

Scale 1 : 50

Depth 2.60 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/07 1100hrs	1B	0	10						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine to coarse gravel of sandstone and mudstone and many rootlets.	0.40		
	2B	0.60							Very weak grey-green MUDSTONE and SILTSTONE recovered as slightly clayey sandy angular and subangular fine to coarse gravel and cobbles.	1.10		
	3D	1.10	1.21	nil	S*375							
	4C	1.10	2.60	1.10		100 85 0	NI NI 10		Moderately weak very closely cleaved between 60 and 85° interbedded grey-green and purple MUDSTONE and SILTSTONE locally recovered NI. Fractures are extremely closely spaced vertical and subvertical planar and stepped tight with black staining and closely spaced subhorizontal undulating rough closed.			
19/04/07 1400hrs 1.60m												
		2.60	2.68	1.10	C*1000				Borehole completed at 2.60m.	2.60		
										(6.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.10m. Waterflush rotary core drilled (116mm) 1.10-2.60m.

CASING: 143m diam to 1.10m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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Geotechnical Engineering Limited

BOREHOLE LOG

BH08

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 19 April 2007

End Date 19 April 2007

Sheet 1 of 1

Scale 1 : 50

Depth 4.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	Ir	instru -ment	description	depth (m)	reduced level (m)	legend
19/04/07 1400hrs	1B	0.10	0.60						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets.	0.40		
	2B	0.60	1.20						Very weak becoming weak very closely cleaved 50 to 75° interlaminated grey-green and purple MUDSTONE with occasional thin beds of SILTSTONE locally recovered NI. Fractures are extremely closely to closely spaced inclined and subvertical planar rough and smooth with discoloured fracture planes, and closely spaced vertical stepped light.			
	3D	1.20	1.65	nil	S 30							
	4C	1.20	2.70	1.20		90 60 0	Ni 10 30					
	5C	2.70	4.30			100 96 0						
19/04/07 1800hrs 2.75m									3.50m: Becoming moderately weak.			
		4.30	4.37	1.20	C*375				Borehole completed at 4.30m.	4.30		
										(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Waterflush rotary core drilled (116mm) 1.20-4.30m.

CASING: 143m diam to 1.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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Geotechnical Engineering Limited

BOREHOLE LOG

BH09

CLIENT ESTOVER COLLEGE

SITE ESTOVER COLLEGE PLYMOUTH

Start Date 17 May 2007

End Date 17 May 2007

Sheet 1 of 1

Scale 1 : 50

Depth 4.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
17/04/07 1200hrs	1B	0.20	0.70						TOPSOIL: Grass over soft light brown sandy clay with a little subangular fine and medium gravel of sandstone and mudstone and many rootlets	0.40		
	2B	0.70	1.20						Soft brown sandy CLAY with much subangular fine to coarse gravel of mudstone and siltstone.	0.80		
	3D	1.20	1.39	nil	S*200				Red-brown slightly clayey SAND.	1.20		
	4C	1.20	2.20	1.20		100 20 20	N/A		Moderately strong grey mottled black fine grained crystalline BASALT.	1.40		
	5D	2.20	2.54	2.20	S*79				Very weak locally weak highly weathered BASALT recovered as weakly cemented clayey sand.			
	6C	2.20	3.00			100 0 0						
	7C	3.00	4.50	2.20		100 0 0						
17/04/07 1700hrs 2.47m									4.20 - 4.80m: Locally moderately weathered.			
		4.50	4.68	2.02	C*167				Borehole completed at 4.50m.	4.50		
										(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Waterflush rotary core drilled (116mm) 1.20-4.50m.

CASING: 143m diam to 2.20m.

BACKFILL: On completion hole backfilled with bentonite pellets.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

CONTRACT 20353

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Classification of consequence

Severe	Short-term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990 Part IIA. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem.
Medium	Chronic damage to human health ('significant harm'). Pollution of sensitive water resources. A significant change in a particular ecosystem.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means of personal protective clothing). Easily repairable effects of damage to buildings, structures and services.

Classification of probability

High Likelihood	There is a pollution linkage and an event, which would either appear, very likely in the short term and almost inevitable over the long term, or, there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that, it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which and event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Comparison of Consequence against Probability

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Description of the classified risks and likely action required

Very High Risk

There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening.

This risk, if realised, is likely to result in a substantial liability.

Urgent investigation (if not undertaken already) and remediation are likely to be required.

High Risk

Harm is likely to arise to a designated receptor from an identified hazard.

Realisation of the risk is likely to present substantial liability.

Urgent investigation (if not already undertaken) is required and remedial works may be necessary in the short term and are likely over the longer term.

Moderate Risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.

Investigation (if not already undertaken) is normally required to classify the risk and to determine the potential liability. Some remedial works may be required in the longer term.

Low Risk

It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that, at worst, this harm if realised would normally be mild.

Very Low Risk

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Appendix B

Interpretive Report

Prepared by: ..... Checked by:

Mark Boobyer
Graduate Engineer

Daniel Morgan
Engineer

Approved by:

Craig Edwards
Principal Engineer

Plymouth

Rev No	Comments	Date
A	First Issue	August 2006

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Job No 48672 Reference IBRG/A Date August 2006

Table of Contents

1 Introduction

1.1 Reason for report

On the instructions of Gale & Snowden for Plymouth City Council, Faber Maunsell Ltd (FML) has carried out an intrusive investigation and geo-interpretative report for the proposed site. The project was commissioned in order to obtain and collate information on the geotechnical and environmental characteristics of the site in relation to the proposed development and assess the potential liabilities associated with the development.

1.2 Brief to the Project

The project was carried out to an agreed brief and has included the following tasks:

- A review of published British Geological Survey maps;
- A review of published hydrology and hydrogeology maps and data;
- A preliminary qualitative assessment of the geo-environmental liability issues associated with the site.

1.3 Proposed Development

It is proposed to develop the site with a single storey timber framed building with masonry cladding and associated car parking.

1.4 Limitations to the report

The information reviewed as part of this report should not be considered exhaustive and has been accepted in good faith by Faber Maunsell Ltd (FML) as providing a true indication of the site conditions. However, no liability can be accepted for the detailed accuracy or otherwise of any of the reports or documents prepared by others for the Client or for third parties, or for any associated errors or omissions.

The exploratory holes carried out during the fieldwork which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of the site conditions. The comments made and recommendations given in this report are based on the ground conditions apparent at the site of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on the groundwater conditions are based on observations made at the time that site work and subsequent monitoring were carried out. It should be noted that ground water levels would vary owing to seasonal or other effects.

It should be noted that the environment and contaminated land guidance and legislation are constantly under review, with authoritative guidance documents subject to change. The conclusions presented herein are based on guidance and legislation available at the time of issuing this report, and no liability can be accepted for the retrospective effects of any changes or amendments to such guidance and/or legislation.

Environmental liability issues associated with the site and/or its sale/purchase have not been covered by this report.

FML has produced this report solely for the use of the Client and his agent. The report should not be relied upon in any way by any third party.

1.5 Sources of Information

Various sources of Information have been utilised during this report in order to identify potential geotechnical and environmental risks associated with the development of the site. These sources include the following: -

- The British Geological Survey (BGS) sheet 349 solid and drift map of Ivybridge (1:50,000 scale);
- The British Geological Survey (BGS) website
- The Environment Agency (EA) website;
- The BRE 211 report "Radon: guidance on protective measures for new dwellings (1999)";
- National Radiological Protection Board (NRPB) "Radon Atlas for England and Wales (2002)";
- Building Research Establishment (BRE) Special Digest 1 (2005) "Concrete in Aggressive Ground";
- The Landfill (England and Wales) Regulations (2002);
- Department for Environment, Food and Rural Affairs (DEFRA) / Environment Agency (EA) "CLR 8 - Potential Contaminants for the Assessment of Contaminated Land";
- Contaminated land legislation: Environmental Protection Act 1990, Part IIA.

2 Site Conditions

2.1 Site Location & Description

The site is located in Estover to the northeast of Plymouth city centre; the National grid reference (NGR) for the centre of the site is 250880E, 59100N.

The site is currently used as an overspill car park for the school located immediately to the south. The site is level and covered with loose gravel and tarmac scarpings. A spoil bund determines the boundary to the north and north east, some school buildings are located to the east, trees and shrubs mark the boundary to the south between the site and the school and Miller Way marks the western site boundary. A location plan showing the site both locally and regionally is included as Figure 1.

2.2 Geology

The British Geological Survey (BGS) 1:50000 map of Ivybridge (sheet 349), indicates that no drift deposits underlie the majority of the site; however there is the potential for alluvial deposits along the northern site boundary. The solid geology is indicated as comprising Upper Devonian Slates of the Devonian period. Basalt and felsite igneous rocks are also shown to be present in to the areas north and east of the site in the form of east/west trending dykes.

The intrusive site investigation identified the presence of sandy clay, underlain by clayey gravel on top of moderately weak to moderately strong mudstone; the clay was absent in some locations with made ground on top of clayey gravel.

2.3 Radon

The National Radiological Protection Board (NRPB) "Radon Atlas of England and Wales" indicates that the site is situated in an area where 3% to 5% of dwellings have average radon levels above the recommended action level of 200Bq/m^3 of air per year. With reference to the BRE 211 "Guidance on Protective Measures for New Dwellings" recommends that basic measures are required.

A standard geological assessment has been undertaken by the BGS, the report confirms that basic radon protection measures are required for the site. A copy of the standard radon report is included as Appendix A of this report.

2.4 Hydrogeology

The Environment Agency (EA) website indicates that the site is underlain by a secondary aquifer; the website also indicates that there are no Source Protection Zones in the Plymouth area. Further reference to the BGS website indicates that the site is located in an area where the aquifer is classified as unproductive.

2.5 Hydrology

There is a local unnamed tributary of the River Plym situated approximately 500m to the west of the site continuing in a southerly direction towards the River Plym, which is located approximately 1200m to the southeast. The Environment Agency (EA) website's general flood risk assessment indicates that the site is not situated in an area at risk of flooding from either of these watercourses.

3 Ground Conditions

3.1 General

An intrusive ground investigation was undertaken by Geotechnical Engineering Ltd, under guidance from FML, on the 1st June 2006. The information retrieved as part of the works has been used to provide a general description of the ground conditions across the site as summarised below.

The scope of works included six trial pits to a maximum depth of 2.7m bgl and two soakaway tests, undertaken in accordance with Building Research Establishment (BRE) Digest 365 "Soakaway Design" (1991).

Geotechnical and geo-environmental laboratory testing was undertaken from samples recovered during the ground investigation, details of the tests and an interpretation of the results is given in section 4 and section 5 of this report.

The information obtained as part of the above works has been used to provide a general description of the ground conditions across the site and is summarised below. The exploratory hole location plan is included as part of the Geotechnical Engineering Ltd factual report in Appendix B.

3.2 Ground Conditions

The ground conditions were generally consistent across the site and the stratigraphic sequence typically comprised made ground, localised areas of silt/clay, fine to coarse gravel underlain by slate. A detailed summary of each stratum encountered is outlined below.

Made Ground

As expected made ground was encountered in all of the exploratory holes and proved to a depth of 0.6m bgl. The made ground typically comprised of mudstone, limestone and tarmacadam fine to coarse gravel in the upper horizon, locally underlain with a mixture of mudstone and limestone gravel in a clay matrix. A geotextile membrane, 2mm thick, was encountered in trial pits TP03 and SA02 at the interface between the made ground and underlying natural strata.

Clay/silt

The clay/silt was encountered in trial pits TP02, TP05 and TP06 and proved to a depth of 0.90m bgl, the stratum was firm to stiff locally stiff with a small amount of fine to coarse gravel of mudstone in TP02 and slate in the remaining trial pits.

Gravel

A fine to coarse slightly clayey gravel of slate lithorelicts was encountered in all trial pits and soakaway test pits at depths of between 0.12m bgl and 0.75m bgl across the site. The gravels were proved to a maximum depth of 2.3m bgl. No strength correlations were indicated in the logs however, the trial pts remained vertical and stable during the excavation which would generally indicate the gravels are medium compact to compact.

Slate

The slate was encountered in each of the trial pits and soakaway test pits trial pits at depths of between 1.3m bgl and 2.3m bgl. The stratum is described as a moderately weak to moderately strong with thin laminae and with very closely spaced sub-vertical fractures in situ. The slate was recovered as slightly clayey slightly sandy gravels.

3.3 Groundwater

Groundwater was not encountered in any of the excavations.

4 Geotechnical Analysis

4.1 General

The following geotechnical assessment is based on in situ and laboratory testing of the soils. The in-situ testing comprised of soakaway tests undertaken in trial pits SA01 and SA02; the laboratory testing comprised of Atterberg limits (including moisture contents), particle size distribution testing, proctor compaction tests and sulphate and pH analysis.

4.2 In-Situ Testing

Soakaway Testing

Two soakaway tests were undertaken in trial pits SA01 and SA02 the pits were excavated to depths of 1.90m bgl and 2.00m bgl respectively and the test was undertaken in accordance with BRE 365 (1991). Each of the tests was conducted within the gravel and underlying slate stratum.

Two test runs were undertaken in SA01 and the results indicate that the infiltration rate increases from $2.1x10^{-5}$ m/s^{-1} during the initial test run to $1.2x10^{-4}$ m/s^{-1} during the final test run.

Three test runs were completed in SA02, similarly to SA01 the soil infiltration rate increases between the initial and final test runs. The soil infiltration rate in SA02 ranges between $2.4x10^{-5}$ m/s^{-1} and $5.1x10^{-4}$ m/s^{-1}.

Therefore, based on the above, a soil infiltration rate of $2.4x10^{-5}$ m/s^{-1} should be employed across the site as part of the drainage design.

4.3 Laboratory Testing

Atterberg Limit Testing

Three tests were undertaken on samples recovered from TP02 at 0.7mbgl, in TP05 at 0.5mbgl and in TP06 at 0.5mbgl in the clay/silt stratum. The results when plotted on the plasticity chart indicate the soils are silts of high to very high plasticity. Furthermore, there is some correlation between the moisture content of the sample and the plasticity of that sample; although the testing was limited the results generally indicate that the samples with greater natural moisture content behave more plastic.

Particle size distribution

Two samples were tested for particle size distribution taken from the gravels at depths of between 0.9m bgl (TP06) and 0.5m bgl (SA01). The test results generally indicate a fine to coarse gravel content of between 71% and 82% with a fine to coarse sand content of 15% to 11% respectively. As expected, from the visual and behaviour observations of these soils the fines content is relatively low and measured at between 6% and 14%.

Proctor compaction testing

Three compaction tests using a 2.5kg rammer were undertaken on samples recovered from made ground in TP01 at 0.30m bgl and the clay/silt in TP02 at 0.35m bgl and TP02 at 0.70m bgl. The result from the made ground in TP01 indicates an optimum moisture content of 19% however testing was limited and therefore this result is inconclusive. The results from the clay/silt indicate an optimum moisture content of between 17% and 19%. Therefore compared with a natural moisture content of 21% measured from the same soils, the existing conditions are considered to be wet of optimum and may require treatment before re-use.

Sulphate and pH

Sulphate and pH were analysis was undertaken on three samples recovered from the made ground, gravel and slate at depths of between 0.35m bgl and 2.20m bgl. Each of the samples analysed had a sulphate concentration of <0.1mg/l, the pH value of the soils ranged between 7.6 and 7.8. Assuming the site is 'brownfield' and with reference to BRE special digest SD1 (2005) "Concrete in Aggressive Ground", a Design Sulphate Class of DS-1 and an ACEC class of AC-1 is recommended for the site.

5 Geo-chemical Analysis

5.1 General

Geochemical solid tests and Waste acceptance criteria (WAC) tests were undertaken selectively on soil samples at depths of between 0.30m bgl and 0.90m bgl. Details of the determinants tested and analysis/interpretation of the results are summarised below.

5.2 Solid

Three samples were recovered solid analysis from the made ground at 0.3mbgl in TP01 and 0.3mbgl in SA01, and from the gravel at 0.9mbgl in TP05. The samples were tested for the following determinants:

- Arsenic ,boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, total cyanide, speciated phenols, water soluble sulphate & pH, acid soluble sulphide, total organic carbon, total sulphur, EPH (aliphatic & aromatic), PAH-16 total, mineral oil, GRO (C4 – C12), BTEX, MTBE and PCB's;

The results were compared with DEFRA/EA Soil Guideline Values (SGV's) and, where SGV's are not available, values based on adjusted Dutch Intervention values and previous site experience that have been agreed with by the EA in other regions have been used. The proposed end-use of the site is commercial and therefore the results have been compared against the guideline/target values for this end-use.

The three samples were found not to contain any elevated concentrations of determinants when compared against an SGV or target values for a commercial end-use. All of the heavy metal and organic determinants returned very low concentrations with some determinants below the limits of detection.

5.3 Waste Acceptance Criteria (WAC)

Two samples recovered from the made ground from 0.3mbgl in TP01 and SA01 were tested for WAC analysis as outlined in the Waste Acceptance Requirements of the Landfill (England and Wales) Regulations (2002). The determinants tested as part of this analysis are as listed below:

Leachate analysis; Arsenic, barium, cadmium, chromium (total), copper, mercury, molybdenum, nickel, lead, antimony, selenium, zinc, chloride, fluoride, soluble sulphate, phenol, Dissolved Organic Carbon (DOC) and Total Dissolved Solids (TDS);

Solid analysis; Total Organic Carbon (TOC), loss on Ignition, Acid Neutralisation Capacity (ANC), BTEX compounds, PCB (7 Congeners), mineral oil and Polycyclic Aromatic Hydrocarbons (PAH 17);

In comparison to published limit values for solid and leachate constituents, the results indicated that all tested determinants were below the detection limits for inert waste. However, as tarmacadam was evident in the made ground these materials would not be classified as inert waste. Therefore it is likely these material would be classified as non-hazardous as the determinants are below the guideline limits for non-hazardous waste (as listed in Environment Agency Technical guidance note WM2). These materials could be screened in order to reduce the quantities of non-hazardous waste.

6 Conclusions and Recommendations

6.1 General

The site is located on an open field site to the north of the existing college buildings in Estover to the northeast of Plymouth; the site is bounded to the west by Miller Way.

The general ground conditions have been identified as comprising a thin layer of made ground, to a maximum depth of 0.7 m bgl, underlain by sandy clay and clayey gravel. Mudstone bedrock was identified at a depth of 1.3m bgl to 2.3m bgl. No groundwater was identified at any location during the intrusive works.

6.2 Recommendations

Based on the information in this report, we propose the following recommendations:

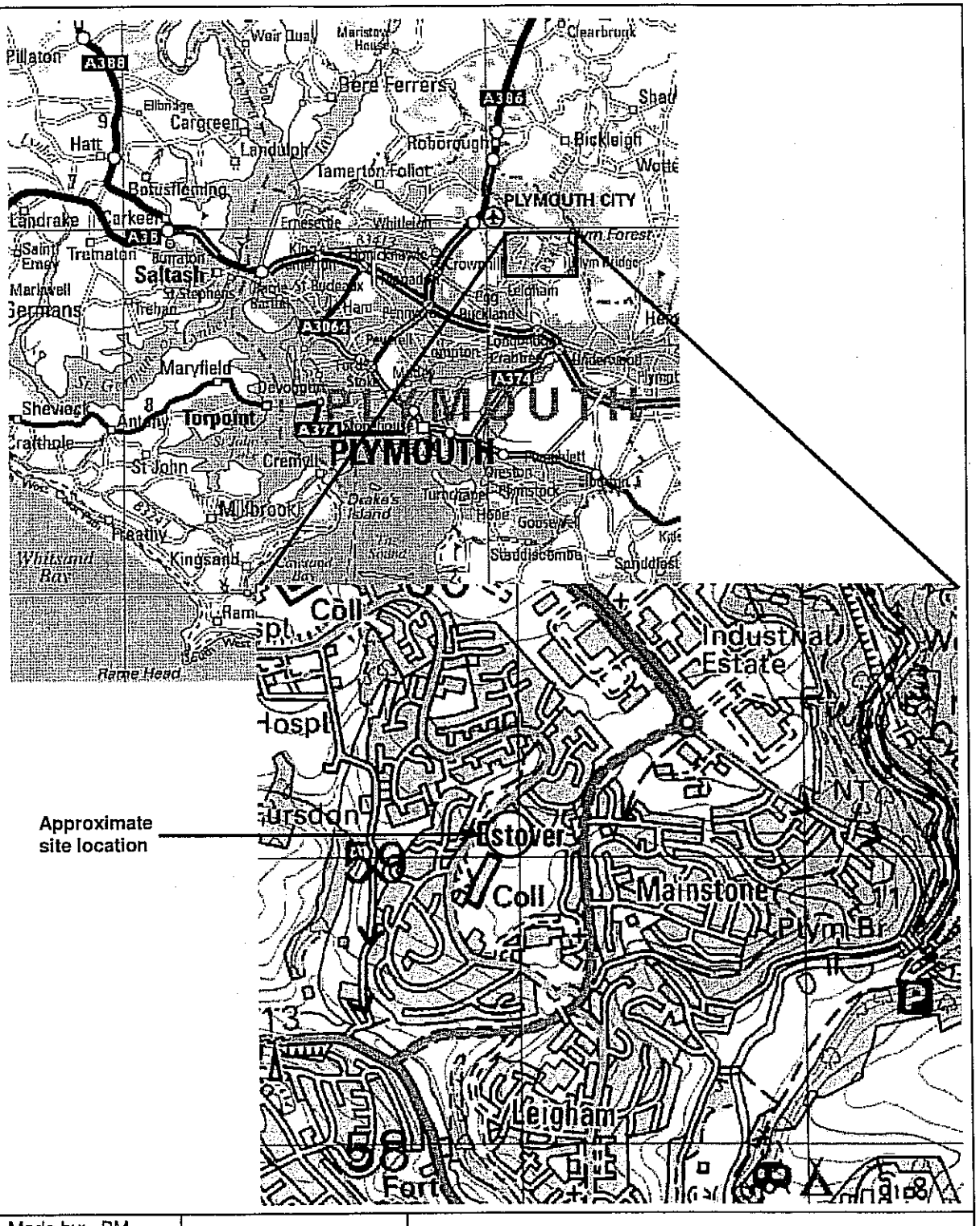
- We anticipate that shallow strip foundations with a founding depth of approximately 1.2m bgl, using published data we anticipate a bearing capacity of 100kN/m^2 to 150kN/m^2 is achievable for foundation widths $\geq$ 1.00m.
- A ground bearing slab is considered to be suitable for the proposed development.
- Using guidance from the BRE SD1 document; it is recommended that a Design Sulphate Class of DS-1 and an ACEC Class of AC-1 is appropriate for concrete design across the site.
- Basic radon protection measures are required as detailed in the British Geological Survey, radon protective measure standard site report (included as Appendix A of this report)..
- The results of the soakaway tests, undertaken to guidance set out in BRE digest 365, indicate that a soil infiltration rate of 2.4x10^{-5} m/s^{-1} should be employed across the site as part of the drainage design

6.3 Environmental Risk

The geo-chemical testing, undertaken as part of this report, does not indicate any elevated determinants when compared to SGV and target value concentrations for commercial/industrial end uses. Furthermore, testing, for Waste Acceptance Criteria, has classified the made ground as being suitable for disposal at a non-hazardous landfill. However, sorting/screening of the material and removal of tarmac may allow a proportion of waste to be disposed of at an inert landfill site.

It is considered that the risk of a pollutant linkage existing on site and in its current state is **very low**, with reference to Part IIA of the Environmental Protection Act 1990 and the findings of this ground investigation.

Figures



Made by: BM	
Checked: DM	Scale: NTS
Approved: CE	Date: August 2006

Figure 1: Site location plan

FABER MAUNSELL | AECOM

Client:	Project:
Plymouth County council	Plymouth Hospital Outreach School, Estover

Appendix A

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Report prepared for:

DAN MORGAN
FABER MAUNSELL
BUSH HOUSE
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BS1 4QD

Radon Protective Measures Site Report – Standard

Advisory report on the requirement for radon protective measures in new dwellings and extensions including a BR211 (1999) Stage 2 Geological Assessment

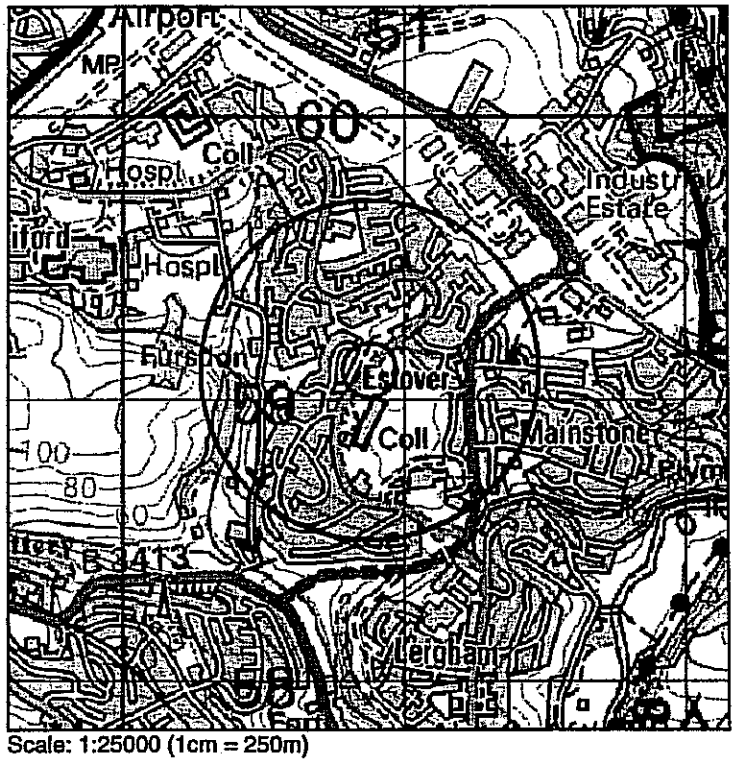
Client's Reference:

PLYMOUTH HOSPITAL OUTREACH SCHOOL

Radon (RPM) Report - Standard

Section 1: Location and extent of report area

Area centred at: 250880,059100
Radius of site area: 100.0 metres



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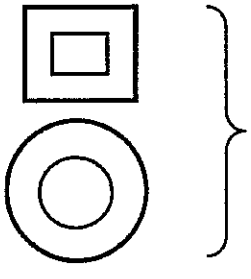

INNER RECTANGLE or CIRCLE defines site area (details provided by client).

OUTER LINE shows extent of TOTAL SEARCH AREA comprising the site area and automatically generated buffer zone. The requirement for radon protective measures indicated in Section 2 is based on a geological assessment of the Total Search Area.

Please see Section 4 for details of how the search is carried out

Section 2: Requirement for radon protective measures

The determination below follows the two stages described in *BR211 Radon: Guidance on protective measures for new dwellings (1999 edition)*, which also provides guidance on what to do if the result indicates that protective measures are required.

Stage 1

Stage 1 (Annex A) of the BR211 (1999) procedure indicates that the minimum level of protection for the report area is **BASIC** radon protective measures.

Stage 2

The Stage 2 geological assessment carried out for this report indicates **BASIC** radon protective measures are required for the report area. This assessment was derived automatically from the BGS Radon Protective Measures GIS (RPM-GIS) from 1:250,000 scale digital data. Results of the geological search are described in Section 3, and more detail on the assessment procedure is outlined in Section 4.

Result

The BR211 (1999) two-stage procedure indicates that **BASIC** protective measures are required for the site. This is the higher of the two levels of protection indicated by Stage 1 and Stage 2.

The BGS is not able to provide advice on the technical specifications of 'basic' and 'full' radon protective measures. This information is detailed in **BRE Report BR211 :Radon: Protective measures for new dwellings** which may be purchased from **brebookshop.com.** BR211 offers guidance on the technical solutions that are required to satisfy Building Regulations requirements. Summary guidance is available on the web at: http://www.bre.co.uk/radon/protect.html.

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.
Contact 020 7944 5745 or Email: partscdgh.br@odpm.gsi.gov.uk for advice on the interpretation of guidance contained in BRE Report BR211.

Section 3: Geological units within the search area

Below is a listing, if available, of the possible combinations of Bedrock (Solid) Geology units and overlying Superficial (Drift) Geology units within the total search area derived automatically by the RPM-GIS.

These have been derived (as indicated) from searches of either:

a) Combined 1:250,000 Bedrock (Solid) and 1:625,000 Superficial (Drift) geology maps
b) 1:50,000 Bedrock (Solid), Superficial (Drift) and Artificial geology maps

1:250,000 data

1.0. UPPER DEVONIAN AND LOWER CARBONIFEROUS ROCKS [UNDIFFERENTIATED](ARGILLACEOUS ROCKS, UNDIFFERENTIATED); No drift

2.0. CREECH BARROW LIMESTONE MEMBER(LIMESTONE 4200); No drift

Section 4: Determining the level of radon protection.

BR 211 (1999) sets out a two-stage procedure to help determine the level of radon protection required in new dwellings and extensions.

In Stage 1 of the procedure, the 5 km grid square radon potential maps (Annex A, BR211,1999) produced by the National Radiological Protection Board (NRPB) are used to make the primary determination of the level of radon protection needed. The NRPB maps are based on the average estimated proportion of homes exceeding the radon Action Level for each 5 km square of the Ordnance Survey National Grid.

In Stage 2, a second series of maps produced by the BGS (Annex B, BR211,1999) is used to decide whether it is necessary to consider upgrading the requirement for protection indicated by Stage 1. This procedure has the objective of avoiding cases of underprotection that might occur had the guidance depended solely on the average radon level in the 5 km grid square indicated by the NRPB maps. The BGS maps in Annex B (BR211, 1999) show those 5 km grid squares that are underlain, completely or in part, by geological units that require either basic or full protection to be installed in new dwellings.

A geological assessment may need to be carried out where the site falls within a shaded grid square on the BGS map in Annex B of BR211 (1999). The geological assessment checks whether a site is on or close to a geological unit which potentially exceeds the action levels for either basic or full radon protection. Consideration must be given to installing basic or full radon protection if the geological assessment shows that this is indicated. If a site falls within one of the shaded squares, it does not necessarily mean that it must have radon protection. This is because some of the grid squares contain bed rocks and unconsolidated (drift) deposits with lower radon potential than the maximum levels shown on the 5 km grid maps in Annex B (BR211, 1999).

In many cases the geological radon potential varies considerably within a grid square. In other cases, only a very small area (sometimes only a few hundred square metres) with a radon potential exceeding the thresholds for basic or full protection occurs within the shaded grid square. The level of protection that might be required is thus site specific, and can be determined by reference to the relevant radon potential map in BR211 (1999) followed by a geological assessment of the site.
(Please note, the NRPB is now the Radiation Protection Division of the Health Protection Agency)

The geological assessment in this report is produced by the BGS Radon Protective Measures Geographical Information System (RPM GIS), which has been developed to provide Stage 2 Geological Assessments (RPM Site Reports). The assessment is derived from a geologically based interpretation of radon measurements in dwellings which were provided to the BGS by the NRPB without prejudicing confidentiality undertakings to householders and the Department of the Environment, Food and Rural Affairs (DEFRA). The reliability of a geological radon potential assessment is approximately proportional to the number of radon measurements available and the scale of the geological maps.

The RPM GIS currently comprises 1:250,000 scale data with more detailed information for twenty 1:50,000 scale geological map sheets covering the most radon-prone parts of Derbyshire, Northamptonshire, Nottinghamshire, Leicestershire, Lincolnshire, Oxfordshire, Shropshire, Somerset and Yorkshire. The RPM-GIS is being upgraded to 1:50,000 scale as new digital maps become available through the BGS DiGMapGB programme.

The search area (circle or rectangle) for a site is increased by a buffer zone of 50 m in areas with 1:50,000 scale data and 500m in areas with 1:250,000 scale data. This is to allow for potential inaccuracies in the position of the geological boundaries. In many cases a number of combinations of bed rock and drift with differing geological radon potentials will occur within the total search area. Following the precautionary principle, the requirement for protective measures is derived from the highest geological radon potential encountered within the total search area.

Section 5: Follow-up Detailed Radon Protective Measures site report

For most parts of the UK, a higher resolution assessment of radon protective measures requirements can also be provided by BGS. This will comprise:

i. Assessment by a qualified geologist of the relevant 10,000, 1:10,560 or 1:50,000 scale geological map(s) covering the total search area from BGS archives.
ii. Identification of the level of radon protective measures indicated for all geological units encountered within the site and the immediately surrounding area.

The basic charge for a Detailed Radon Protective Measures Report is **£220 (incl. VAT & Delivery)**. Reports for very large or geologically complex sites may, however, have to be supplemented with additional charge – in such cases, enquiry staff will confirm the charge with the client before proceeding.

The Radon follow-up reports can be ordered from:-
Geological Enquiries, British Geological Survey, Keyworth, Nottingham NG12 5GG; Tel: 0115-936-3192; Fax: 0115-936-3192; e-mail: geohelp@bgs.ac.uk. An on-line ordering facility is available on the BGS Website: www.bgs.ac.uk/georeports.

Section 6: What is radon ?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters poorly ventilated enclosed spaces such as some basements, buildings, caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.

Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level exceeds the Action Level, measures should be taken to reduce the concentration.

Section 7: Radon in workplaces

The Ionising Radiation Regulations, 1999, require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.**

BRE publications may be obtained from The BRE Bookshop, I H S Technical Indexes Ltd., Willoughby Road, Bracknell, Berkshire RG12 8DW. Tel: 01344 404407, Fax: 01344 714440, website: www.brebookshop.com

Section 8: Radon in existing dwellings

Useful information is given in the following free publications which can be obtained by writing to: Radon Studies, Radiation Protection Division, Health Protection Agency, Chilton, Didcot, Oxfordshire OX11 0RQ

Radon - A Householder's Guide
Radon - You Can Test for it
Radon - A Guide for Homebuyers and Sellers
Radon - A Guide to Reducing Levels in Your Home
Information in the booklets is also available on the DEFRA website at:
http://www.defra.gov.uk/environment/radioactivity/radon/index.htm

Householders are recommended to follow advice in **Radon - a householder's guide.** The guide outlines simple solutions for dealing with the radon problem depending on whether or not the home has been tested for radon. In radon affected homes, the problem of radon can usually be tackled with simple, effective and relatively inexpensive measures. These measures are comparable in cost to work such as damp-proofing and timber treatment. You can get practical advice about construction work to reduce radon levels from the Building Control Officer at your local council.

Advice about radon, its health risks and details of how to order the radon test may be obtained from the **Radon Freephone** on 0800 614529 or Tel: 01235 822622, website: www.hpa.org.uk or by writing to Radon Studies at the Health Protection Agency, address above.

Appendix B

REPORT

SUBJECT	**GROUND INVESTIGATION**
SITE	**ESTOVER COMMUNITY COLLEGE - PROPOSED NEW OUTREACH BASE FOR PLYMOUTH HOSPITAL SCHOOL**
PROJECT	**PROPOSED DEVELOPMENT**
CLIENT	**PLYMOUTH COUNTY COUNCIL**
ENGINEER	**FABER MAUNSELL**
INSTRUCTION	**Clients letter of instruction dated 17th May 2006 Ref B0602/site/surveys/corres/GE01.**
GEL REPORT No.	**19065** **Volume 1 of 1**
Date of Report	**08 August 2006**

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e-mail: geotech@geoeng.co.uk

CONTENTS

1. INTRODUCTION

It is proposed to construct a new outreach base for Plymouth Hospital School within the grounds of Estover Community College. Geotechnical Engineering Limited was instructed to carry out an investigation under the direction of the Engineer to determine the ground conditions.

This report describes the investigation and presents the findings.

2. SITE LOCATION

The site is situated to the north of Plymouth City Centre within the grounds of Estover Community College adjacent to Miller Way and may be located by its National Grid Reference 250940, 59075.

3. GROUND INVESTIGATION

3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:1999 during the period 1st June 2006 and comprised eight trial pits and two soakaway tests.

The exploratory hole locations were selected by the Engineer and set out by this Company and are shown on Figure 1. The ground level and location at each exploratory hole was established by this Company using Global Positioning System (GPS) survey equipment.

3.2 Logging

The trial pits, referenced TP01 to TP06, SA01 and SA02 (Appendix A), were formed by a wheeled excavator with a 0.60m wide backactor bucket.

The ground surface at each trial pit location consisted of loose tarmacadam scalpings which were placed to one side during excavation.

Representative disturbed samples were taken and retained in sealed plastic bags and airtight containers to retain moisture content.

Soakaway tests were carried out in trial pits SA01 and SA02 in general accordance with BRE 365 (1991). The excavation sides were squared using the excavator bucket and the trial pit filled with clean water using a dedicated bowser with a 50mm diameter outlet. The results are presented in Appendix A.

Photographs of the trial pit profile and spoil heap were taken and are presented separately.

On completion all trial pits were backfilled with arisings compacted in suitable layers by the excavator bucket. The ground surface was reinstated and left slightly proud to accommodate the future inevitable settlement of the backfill.

On completion of fieldwork all samples were brought to this Company's laboratory for logging, testing and storage.

The trial pits were logged in situ to a depth of approximately 1.20m and thereafter from the surface. Detailed descriptions are given in the trial pit logs, Appendix A,

along with details of sampling and in situ testing, groundwater ingress and relevant comments on stability and excavatability.

3.3 Laboratory Testing

A schedule of laboratory tests was prepared by the Engineer, the following tests being carried out in accordance with BS1377:1990, unless stated otherwise. The number in brackets refers to the test number given in that standard. The results are presented in Appendix B.

The natural moisture content [Part 2:3.2] was determined on three selected samples.

Liquid limit, plastic limit and plasticity index tests [Part 2:4.3, 5.3 and 5.4] were carried out on three selected samples. An Atterberg line plot has also been presented.

Particle size distributions were determined for two samples by wet sieving [Part 2:9.2]. The fine fractions of one of these samples were further analysed by sedimentation using the pipette method [Part 2:9.4]. The results are presented as grading curves.

The sulphate content of 2:1 aqueous extracts were determined for three soil samples using the gravimetric method [Part 3:5.5]. The pH values of the samples were determined using the electrometric method [Part 3:9].

The compaction characteristics of three selected soil samples were investigated using a 2.5kg rammer [Part 4:3.2 and 3.3/3.4]. The results are presented as a plot of dry density against moisture content.

Selected samples were despatched to Alcontrol Geochem and subjected to in-house chemical analyses, the results are presented in Appendix C.

GEOTECHNICAL ENGINEERING LIMITED

L Barton BSc(Hons)
Engineering Geologist

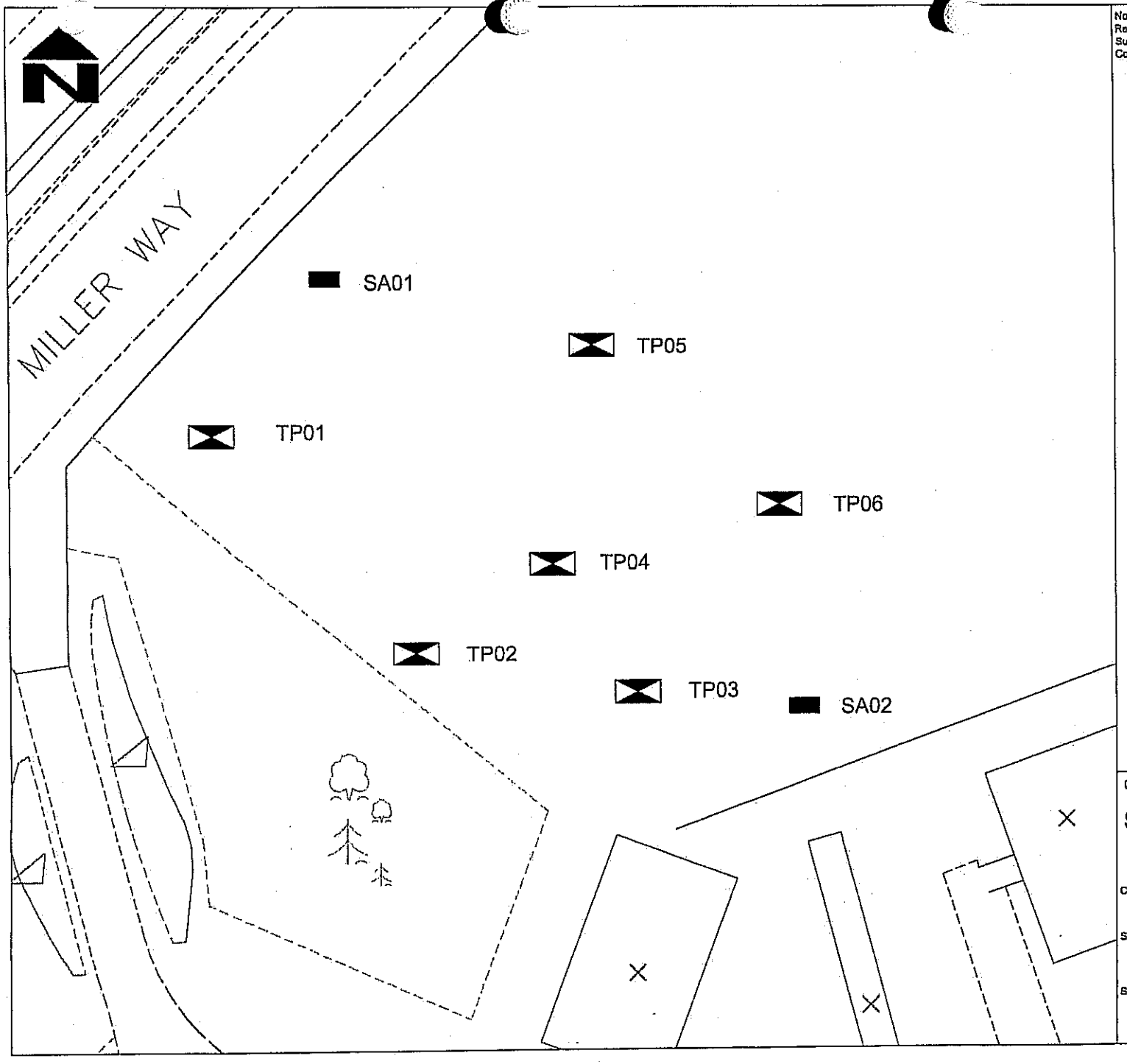
R Smy BSc CGeol FGS
Principal Engineering Geologist

4. REFERENCES

Building Research Establishment (1991): Soakaway Design. BRE Digest 365.

British Standards Institution (1999): Code of practice for site investigations. BS 5930.

British Standards Institution (1990): Methods of tests for soils for civil engineering purposes. BS 1377 Parts 1-9.



KEY

= Trial Pit location

= Soakaway location

Geotechnical Engineering Limited

SITE PLAN

Client: PLYMOUTH CITY COUNCIL

Site: ESTOVER COMMUNITY COLLEGE PLYMOUTH

Scale: 1 : 250

CONTRACT	FIGURE
19065	1

APPENDIX A

EXPLORATORY HOLE DATA AND IN SITU TESTING

Geotechnical Engineering Limited

KEY TO EXPLORATORY HOLE LOGS

Sample type

D	Small disturbed sample	D*	Contamination sample
B	Large disturbed sample	W	Water sample
U	Undisturbed sample	P	Piston sample
X	Dynamic sample	C	Core sample

Test type

SPT

S	Split spoon sampler followed by SPT 'N' value
C	Solid cone followed by SPT 'N' value
*250	Where full test drive not completed, linearly extrapolated N value reported
**	No effective penetration

H	Hand vane – direct reading in kPa – not corrected for BS1377 (1990). Re* denotes refusal.
M	Mackintosh probe result – number of blows to achieve 100mm penetration
PP	Pocket penetrometer result – direct reading in kg/sq.cm.

Sample/core range/I_f

	Dynamic sample
	Undisturbed sample
x	X = Total Core Recovery (TCR) as percentage of core run. Where value significantly exceeds 100%, a note is given in Remarks on log.
y	Y = Solid Core Recovery (SCR) as percentage of core run. Note: assessment of solid core is based on full diameter.
z	Z = Rock Quality Designation (RQD). The amount of solid core greater than 100mm expressed as percentage of core run.

Where SPT has been carried out at beginning of core run, disturbed section of core excluded from SCR and RQD assessment.

I_f - fracture spacing – the average fracture spacing (in millimetres) over the indicated length of core. Where spacing varies significantly, the minimum, average and maximum values are given.
NI = non-intact core
NA = not applicable

Instrumentation

	Porous tip		Granular response zone		Cement/bentonite grout
	Perforated standpipe		Bentonite seal		Soil backfill
	Gas monitoring standpipe		Concrete		

Stratum boundaries

----------	Estimated boundary
---.---.---	Grading boundary

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KEY TO EXPLORATORY HOLE LOGS

Logging

The logging of soils and rocks has been carried out in general accordance with BS 5930:1999

For mixed soils the proportions of secondary constituents have been described using the following terms:

Description before SOIL NAME	SAND or GRAVEL	CLAY or SILT	Description after SOIL NAME
Slightly *	< 5%	< 35%	with a little
*	5 – 20%	35 – 65%	with some
very *	> 20%	> 65%	with much

* clayey, silty, sandy or gravelly as appropriate

For rocks the term fracture has been used to identify a mechanical break within the core. Where possible incipient and drilling induced fractures have been excluded from the assessment of the fracture state. Where doubt exists, a note has been made in the descriptions.

General Comments

The process of drilling and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

Indicated water levels are those recorded during the progress of drilling in open or cased boreholes and may not represent standing water levels.

Legends are drawn in accordance with BS 5930:1999.

All depths are measured along the axis of the borehole and are related to ground level at the point of entry.

Geotechnical Engineering Limited

TRIAL PIT LOG

TP01

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH — Sheet 1 of 1

Start Date 01 June 2006 — Easting 250892.0 — Scale 1 : 25

End Date 01 June 2006 — Northing 59104.0 — Ground level 85.90mOD — Depth 1.50 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND: Grey slightly clayey slightly sandy subangular fine to coarse gravel of mudstone, limestone and tarmacadam with frequent cobbles and rare boulder of tarmacadam.	0.20	85.70	
	1D		0.30	MADE GROUND: Stiff red brown slightly sandy clay with a little locally some angular and subangular fine to coarse gravel and occasional cobbles of mudstone.	0.40	85.50	
	2B		0.30	Red-brown slightly clayey locally clayey slightly sandy angular and subangular fine to coarse GRAVEL and rare cobble sized lithorelicts of slate.			
	3D		0.60				
	4B		0.60				
					1.30	84.60	
	5B		1.40	Grey moderately weak and moderately strong thinly laminated SLATE with closely spaced subvertical to 75° fractures recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel.	1.50	84.40	
Dry.				Trial pit completed at 1.50m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 2.00x0.70x1.50m.
Trial pit terminated at 1.50m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

CONTRACT	CHECKED
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TRIAL PIT LOG

TP02

CLIENT	PLYMOUTH CITY COUNCIL					Sheet	1 of 1
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH					Scale	1 : 25
Start Date	01 June 2006	Easting	250905.0			Depth	2.70 m
End Date	01 June 2006	Northing	59089.0	Ground level	87.01mOD		

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND: Light and dark grey slightly clayey slightly sandy subangular to subrounded fine to coarse gravel of limestone, tarmacadam and mudstone with occasional cobbles of tarmacadam and rare rootlets up to 3mm thick.	0.25	86.76	
	1D		0.35	Stiff light brown slightly sandy CLAY/SILT with a little subangular fine to coarse gravel of mudstone with occasional roots up to 3mm thick.			
	2B		0.35				
				0.60m: Becoming red brown.			
	3D		0.70				
	4B		0.70		0.90	86.11	
	5D		1.00	Red-brown discoloured orange slightly clayey locally clayey slightly sandy angular and subangular fine to coarse GRAVEL lithorelicts of slate.			
	6B		1.00				
					2.30	84.71	
				Moderately weak and moderately strong grey discoloured orange thinly laminated SLATE with closely spaced sub vertical to 80° and closely spaced 60 to 70° fractures, recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel.			
	7B		2.60		2.70	84.31	
Dry.				Trial pit completed at 2.70m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides slightly unstable.
Trial pit dimensions 2.30x0.70x2.70m.
Trial pit terminated at 2.70m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP03

CLIENT	PLYMOUTH CITY COUNCIL					Sheet	1 of 1
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH					Scale	1 : 25
Start Date	01 June 2006	Easting	250920.0			Depth	2.00 m
End Date	01 June 2006	Northing	59087.0	Ground level	87.39mOD		

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND: Grey slightly clayey slightly sandy subangular to subrounded fine to coarse gravel of limestone and tarmacadam with occasional cobbles of tarmacadam.	0.10	87.29	
				MADE GROUND: Brown locally clayey slightly sandy subangular to subrounded fine to coarse gravel of limestone and mudstone.	0.20	87.19	
				MADE GROUND: Stiff to very stiff brown slightly sandy clay with a little subangular fine to coarse gravel lithorelicts of mudstone.	0.60	86.79	
				Geotextile membrane 2mm thick.			
				Brown and grey slightly clayey locally clayey slightly sandy angular to subangular fine to coarse GRAVEL of slate.			
				1.10 - 1.69m: Red brown slightly clayey, slightly sandy.	1.70	85.69	
	1B		1.80	Moderately weak and moderately strong grey mottled orange very thinly laminated SLATE with very closely subvertical fractures.	2.00	85.39	
Dry.				Trial pit completed at 2.00m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 2.00x0.70x2.00m.
Trial pit terminated at 2.00m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP04

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH

Sheet 1 of 1

Start Date 01 June 2006 Easting 250914.0 Scale 1 : 25

End Date 01 June 2006 Northing 59096.0 Ground level 87.13mOD Depth 2.30 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND: Grey slightly clayey slightly sandy subangular fine to coarse gravel of limestone, mudstone and tarmacadam with rare cobbles of tarmacadam.	0.12	87.01	
				Red-brown slightly clayey locally clayey slightly sandy angular to subangular fine to coarse GRAVEL and occasional cobble sized lithorelicts of slate.			
				0.43m: 1 no. coarse gravel sized fragment of charcoal.			
	1D		1.00				
	2B		1.00				
				Grey moderately weak and moderately strong thinly laminated SLATE with closely spaced sub-vertical to 75° fractures, recovered as slightly clayey, slightly sandy angular and subangular fine to coarse gravel.	1.90	85.23	
				2.00m: Becoming difficult to excavate.			
	3D		2.20		2.30	84.83	
Dry.	4B		2.20	Trial pit completed at 2.30m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 2.50x0.60x2.30m.
Trial pit terminated at 2.30m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP05

CLIENT	PLYMOUTH CITY COUNCIL					Sheet	1 of 1
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH					Scale	1 : 25
Start Date	01 June 2006	Easting	250917.0			Depth	2.00 m
End Date	01 June 2006	Northing	59110.0	Ground level	87.80mOD		

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1B		0.05	MADE GROUND: Grey slightly clayey slightly sandy subangular fine to coarse gravel of limestone, mudstone and tarmacadam with rare cobbles of tarmacadam.	0.15	87.65	
	2D		0.10	Firm and stiff red-brown slightly sandy CLAY/SILT with some subangular fine to coarse gravel of slate.			
	3D		0.50				
	4B		0.50		0.75	87.05	
	5D		0.90	Light brown slightly clayey slightly sandy angular and subangular fine to coarse GRAVEL lithorelicts of slate.			
	6B		0.90	1.00m: Becoming difficult to excavate.			
					1.80	86.00	
Dry.				Moderately strong light grey discoloured red-brown thinly laminated SLATE with very closely spaced sub-vertical to 75° fractures recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel.	2.00	85.80	
				Trial pit completed at 2.00m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides slightly unstable.
Trial pit dimensions 2.00x0.60x2.00m.
Trial pit terminated at 2.00m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

TP06

CLIENT	PLYMOUTH CITY COUNCIL					Sheet	1 of 1
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH					Scale	1 : 25
Start Date	01 June 2006	Easting	250929.0				
End Date	01 June 2006	Northing	59099.0	Ground level	88.26mOD	Depth	2.00 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
				MADE GROUND: Grey slightly clayey slightly sandy subangular fine to coarse gravel of mudstone, limestone and tarmacadam with rare cobbles of tarmacadam.	0.12	88.14	
				Stiff red-brown slightly sandy CLAY/SILT with a little locally some subangular fine to coarse gravel of slate.			
	1D		0.50				
	2B		0.50		0.75	87.51	
				Light brown slightly silty locally silty slightly sandy angular and subangular fine to coarse GRAVEL and occasional cobble sized lithorelicts of slate.			
	3D		0.90				
	4B		0.90				
					1.70	86.56	
				Moderately weak and moderately strong light grey thinly laminated SLATE with very closely spaced sub vertical to 75° fractures, recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel.	2.00	86.26	
Dry.	5B		2.00	Trial pit completed at 2.00m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides remained stable and vertical.
Trial pit dimensions 2.20x0.60x2.00m.
Trial pit terminated at 2.00m effective refusal in bedrock.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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TRIAL PIT LOG

SA01

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH — Sheet 1 of 1

Start Date 01 June 2006 — Easting 250899.0 — Scale 1 : 25

End Date 01 June 2006 — Northing 59114.0 — Ground level 86.60mOD — Depth 1.90 m

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1D		0.05	MADE GROUND: Grey slightly clayey slightly sandy subangular fine to coarse gravel of limestone, mudstone and tarmacadam with rare cobbles of tarmacadam.	0.15	86.45	
	2D		0.30	MADE GROUND: Firm red brown slightly sandy clay with some subangular fine to coarse gravel of mudstone.	0.40	86.20	
	4D		0.50	Red-brown and light grey slightly silty slightly sandy angular and subangular fine to coarse GRAVEL lithorelicts of slate.			
	3B		0.50				
	5B		0.80				
					1.30	85.30	
				Moderately weak and moderately strong grey discoloured red brown thinly laminated SLATE with very closely spaced subvertical fractures, recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel. 1.30m: Becoming difficult to excavate below 1.30m.			
	6D		1.80				
					2.00	84.60	
Dry.				Trial pit completed at 1.90m.			

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides becoming unstablefrom 1.00-1.30m.
Trial pit dimensions 2.00x0.60x1.90m.
Trial pit terminated at 1.90m in bedrock.
Soakaway test undertaken in pit.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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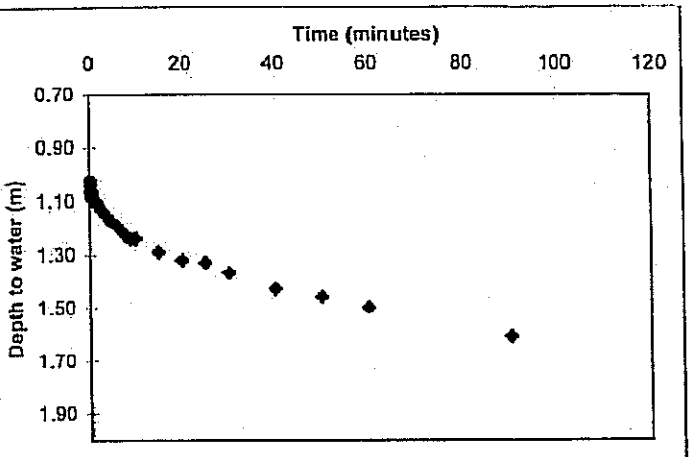
SOAKAWAY TEST

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH TRIAL PIT **SA01**

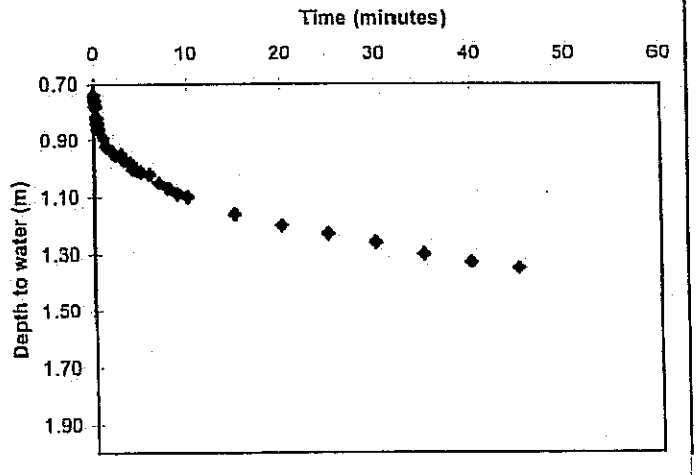
LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	2.00 m
WATER LEVEL	1.02 m
V_{p75-25}	0.56 m^3
a_{p50}	3.75 m^2
t_{p75-25}	7260.00 s

soil infiltration rate, *f* **2.1×10^{-5}** **ms^{-1}**



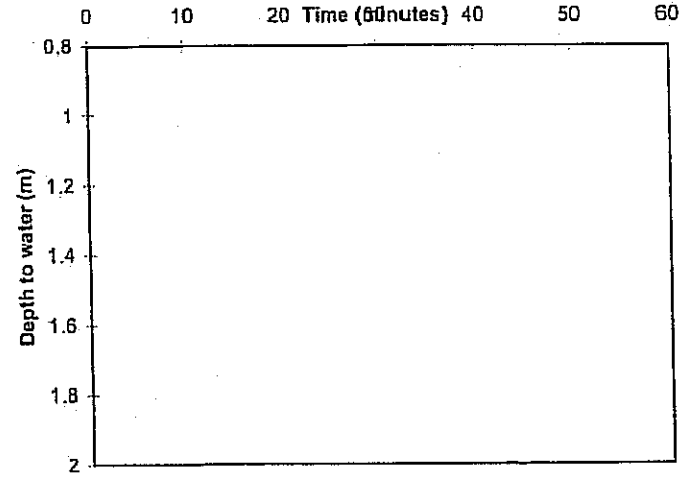
LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	1.35 m
WATER LEVEL	0.74 m
V_{p75-25}	0.37 m^3
a_{p50}	2.79 m^2
t_{p75-25}	1080.00 s

soil infiltration rate, *f* **1.2×10^{-4}** **ms^{-1}**



LENGTH	m
BREADTH	m
DEPTH	m
WATER LEVEL	m
V_{p75-25}	m^3
a_{p50}	m^2
t_{p75-25}	s

soil infiltration rate, *f* **ms^{-1}**



Remarks Trial pit unstable during soakaway testing

Test carried out in accordance with BRE 365 (1991)

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TRIAL PIT LOG

SA02

CLIENT	PLYMOUTH CITY COUNCIL					Sheet	1 of 1
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH					Scale	1 : 25
Start Date	01 June 2006	Easting	250931.0			Depth	2.00 m
End Date	01 June 2006	Northing	59086.0	Ground level	87.78mOD		

water record	sample/test no/type	sample/test result	sample/test depth (m)	description	depth (m)	level (m)	legend
	1D		0.05	MADE GROUND: Light grey slightly clayey slightly sandy subangular fine to coarse gravel of limestone and mudstone with occasional cobbles of tarmacadam.	0.10	87.68	
	2D*		0.05	MADE GROUND: Firm light brown slightly sandy clay with some subangular fine to coarse gravel of mudstone.	0.40	87.38	
				0.25m: Geotextile membrane 2mm thick.			
	3D		0.50	Brown slightly clayey, slightly sandy subangular fine to coarse GRAVEL lithorelicts of slate.			
	4B		1.00				
	5D		1.40				
				Moderately weak and moderately strong grey discoloured red brown thinly laminated SLATE with very closely spaced subvertical fractures, recovered as slightly clayey slightly sandy angular and subangular fine to coarse gravel.	1.70	86.08	
Dry.				Trial pit completed at 2.00m.	2.00	85.78	

Notes

Trial pit excavated by JCB 3CX mechanical excavator.
Groundwater not encountered.
Trial pit sides slightly unstable.
Trial pit dimensions 2.00x0.60x2.00m.
Trial pit terminated at 2.00m in bedrock.
Soakaway test undertaken in pit.
On completion, the trial pit was backfilled with materials arising.

Sketch of Foundation - Not to scale. All dimensions in metres.

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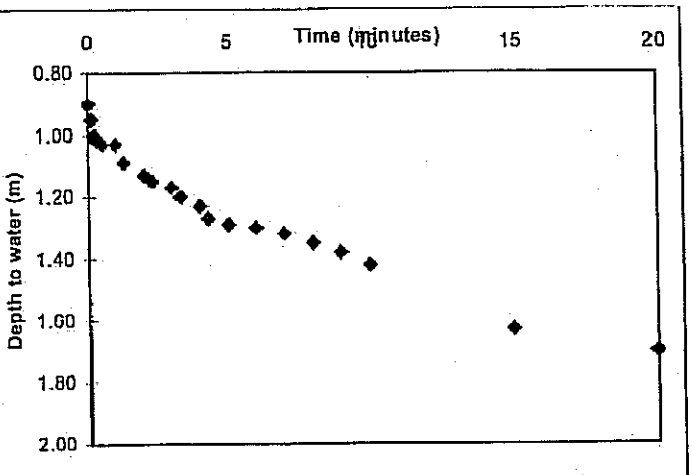
SOAKAWAY TEST

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH TRIAL PIT **SA02**

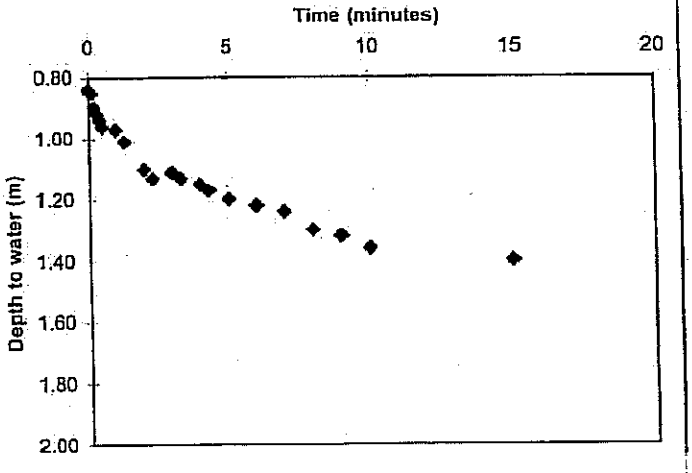
LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	2.00 m
WATER LEVEL	0.90 m
V_{p75-25}	0.48 m^3
a_{p50}	3.28 m^2
t_{p75-25}	600.00 s

soil infiltration rate, *f* **2.4×10^{-5} ms^{-1}**



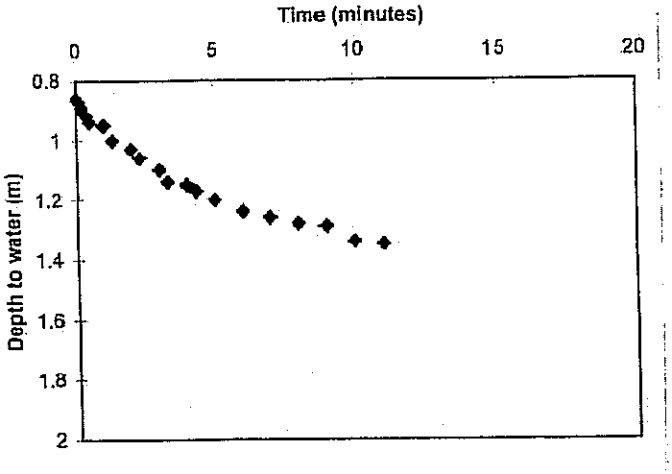
LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	1.70 m
WATER LEVEL	0.84 m
V_{p75-25}	0.34 m^3
a_{p50}	2.66 m^2
t_{p75-25}	240.00 s

soil infiltration rate, *f* **5.3×10^{-4} ms^{-1}**



LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	1.40 m
WATER LEVEL	0.86 m
V_{p75-25}	0.30 m^3
a_{p50}	2.47 m^2
t_{p75-25}	240.00 s

soil infiltration rate, *f* **5.1×10^{-4} ms^{-1}**



Remarks Trial pit unstable during soakaway testing

Test carried out in accordance with BRE 365 (1991)

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APPENDIX B

LABORATORY TESTING

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LIQUID AND PLASTIC LIMITS

BS.1377 : Part 2 : 1990 : 4 and 5

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH

borehole /trial pit no.	sample no./type	sample depth (m)	specimen depth (m)	natural moisture content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks
TP02	4B	0.70	0.70	21	BY	63	53	36	17	Brown SILT with some f-c gravel
TP05	4B	0.50	0.50	11	BZ	82	42	26	16	Brown clayey silty slightly sandy mudstone GRAVEL
TP06	2B	0.50	0.50	24	BX	19	77	51	26	Brown slightly sandy SILT with a little fine gravel

general remarks:
natural moisture content determined in accordance with BS1377 : Part 2 : 1990 : 3.2 (unless specified)
NP denotes non-plastic

ORIGINATOR

specimen preparation:
A - as received
B - washed on 0.425mm sieve
C - air dried
D - oven dried (50°C)
E - not known

test method:
X - cone penetrometer (test 4.3)
Y - one point cone penetrometer (test 4.4)
Z - Casagrande apparatus (test 4.5)

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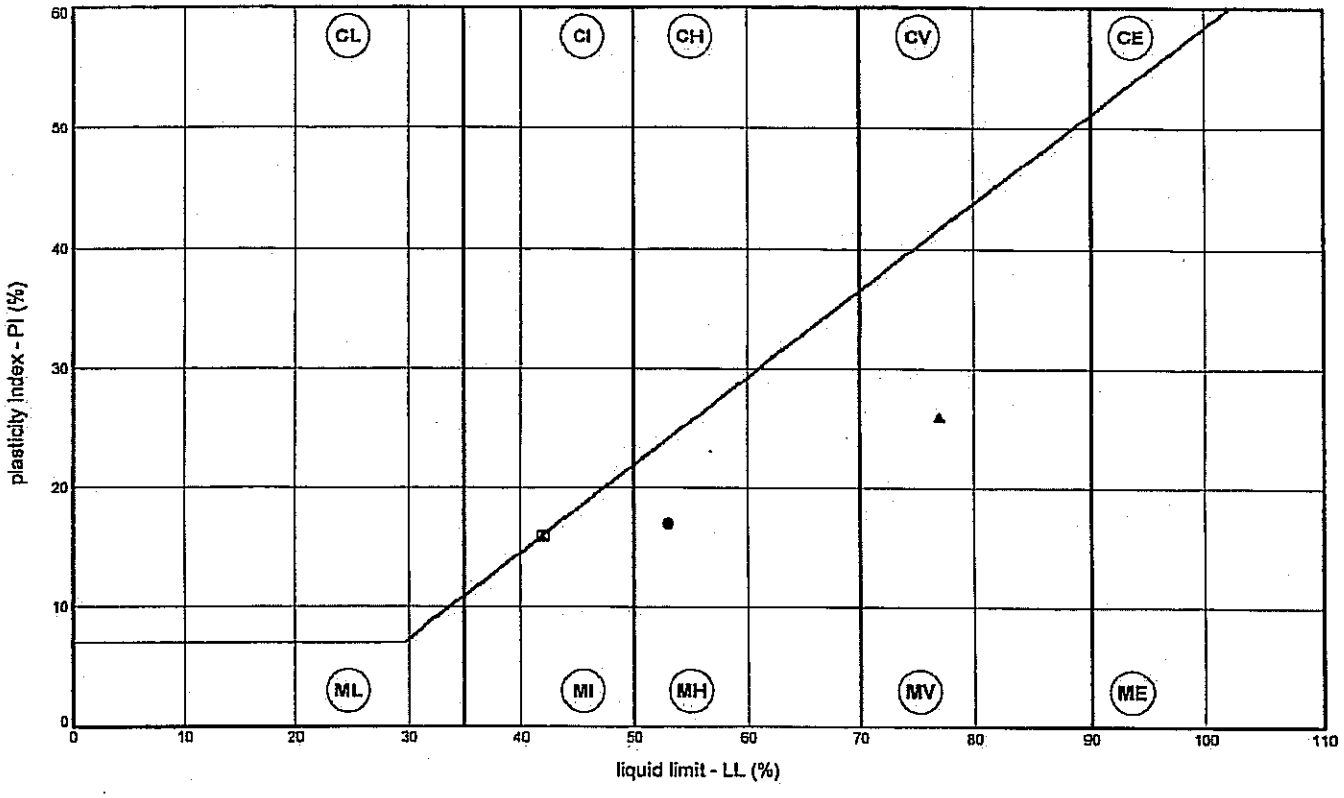
ATTERBERG LINE PLOT

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH



	BH/TP No.	depth (m)	LL	PL	PI	remarks
●	TP02	0.70	53	36	17	
⊠	TP05	0.50	42	26	16	
▲	TP06	0.50	77	51	26	

CONTRACT	ORIGINATOR	CHECKED
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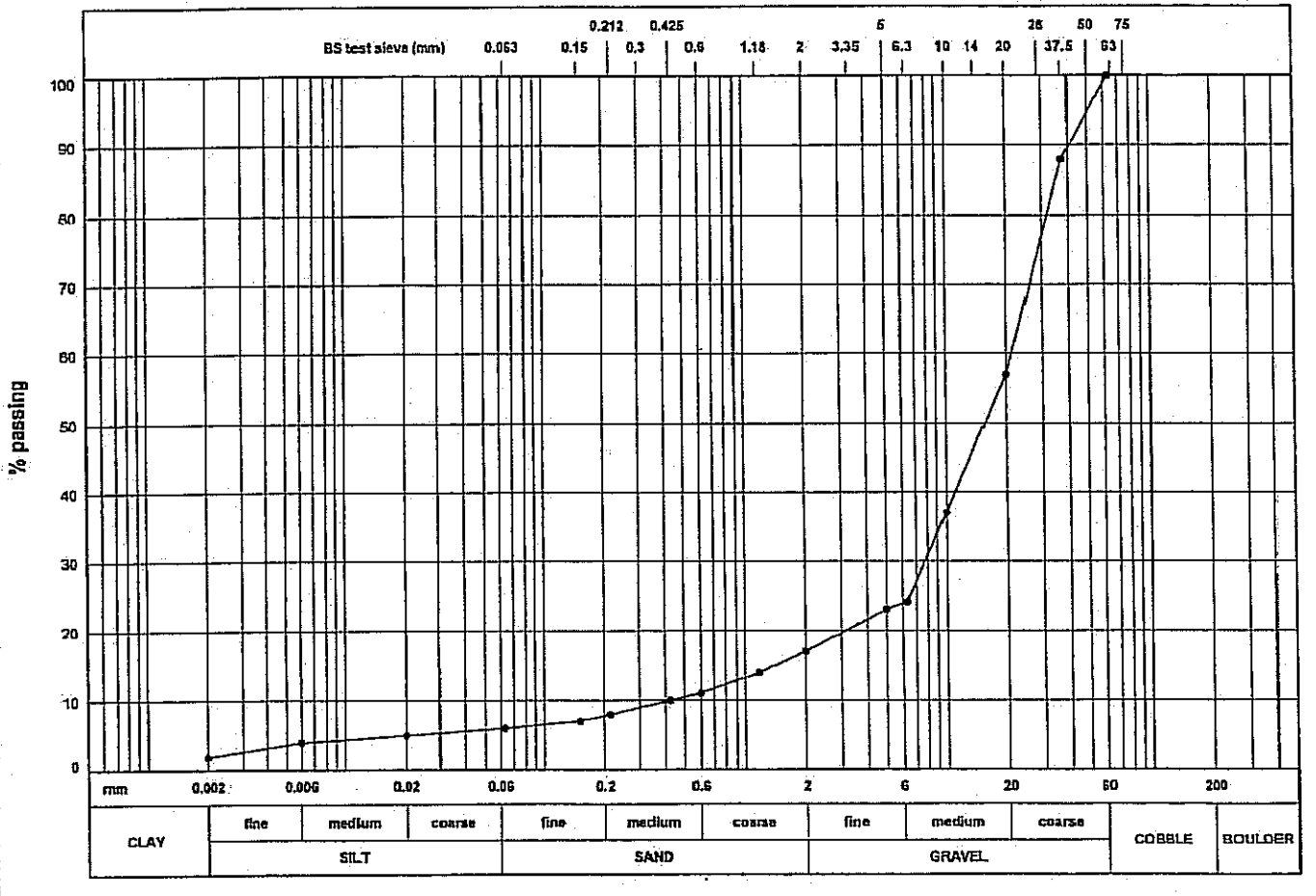
PARTICLE SIZE DISTRIBUTION

BS.1377 : Part 2 : 1990 : 9

CLIENT	PLYMOUTH CITY COUNCIL	BH/TP No.	SA01
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH	SAMPLE No./TYPE	4D
		SAMPLE DEPTH (m)	0.50
DESCRIPTION	Orange-brown silty sandy GRAVEL with occasional cobbles	SPECIMEN DEPTH (m)	0.80



soil type	% fraction
CLAY	2
SILT	4
SILT & CLAY	6
SAND	11
GRAVEL	82
COBBLE & BOULDER	1
test method(s)	9.2 & 9.4

BS test sieve (mm)	% passing
150	
75	
63	100
50	
37.5	88
28	
20	57
14	
10	37
6.3	24

BS test sieve (mm)	% passing
5	23
3.35	
2	17
1.18	14
0.6	11
0.425	10
0.3	
0.212	8
0.15	7
0.063	6

particle size (µm)	% finer
20	5
6	4
2	2

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

ORIGINATOR

remarks:

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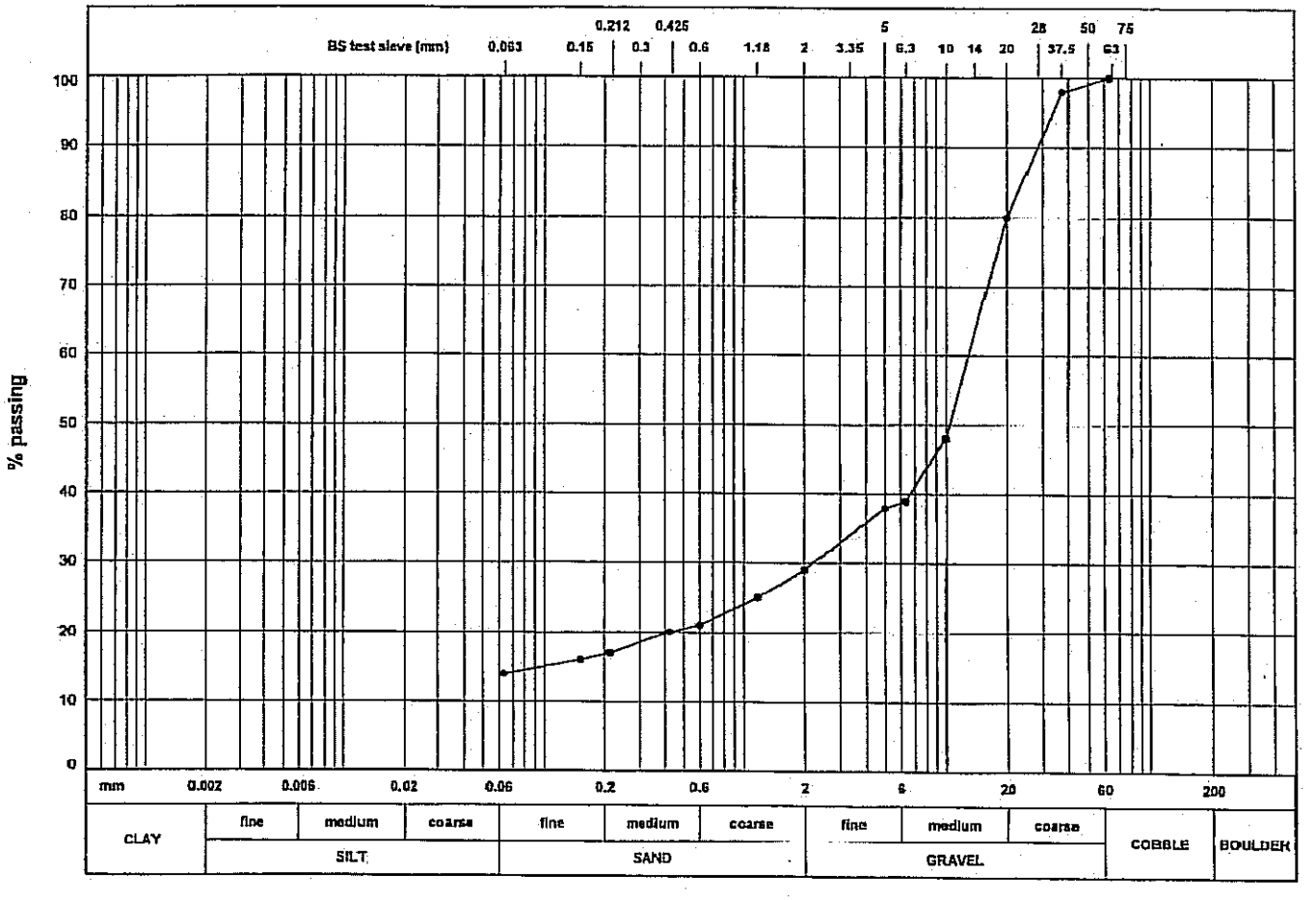
PARTICLE SIZE DISTRIBUTION

BS.1377 : Part 2 : 1990 : 9

CLIENT	PLYMOUTH CITY COUNCIL	BH/TP No.	TP06
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH	SAMPLE No./TYPE	4B
		SAMPLE DEPTH (m)	0.90
DESCRIPTION	Grey-brown silty sandy mudstone GRAVEL	SPECIMEN DEPTH (m)	0.90



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	14
SAND	15
GRAVEL	71
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing
150	
75	
63	100
50	
37.5	98
28	
20	80
14	
10	48
6.3	39

BS test sieve (mm)	% passing
5	38
3.35	
2	29
1.18	25
0.6	21
0.425	20
0.3	
0.212	17
0.15	16
0.063	14

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

ORIGINATOR

remarks:

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SULPHATE CONTENT AND pH VALUE

BS.1377 : Part 3 : 1990 : 5 and 9

CLIENT PLYMOUTH CITY COUNCIL

SITE ESTOVER COMMUNITY COLLEGE, PLYMOUTH

borehole /trial pit no.	sample no./type	sample depth (m)	specimen depth (m)	fraction <2mm (%)	average sulphate content - SO_3 in soil total (%)	average sulphate content - SO_3 in soil 2:1 water extract (g/l)	average sulphate content - SO_3 in ground-water (g/l)	pH	description and remarks
TP02	2B	0.35	0.35	100		<0.1 (<0.1)		7.6	Brown mottled orange-brown slightly sandy CLAY with a little mudstone gravel
TP04	1D	1.00	1.00	100		<0.1 (<0.1)		7.8	Grey mottled orange-brown slightly sandy CLAY
TP04	4B	2.20	2.20	6		<0.1 (<0.1)		7.6	Brown slightly silty slightly sandy mudstone gravel

general remarks:

ORIGINATOR

the bracketed values above give the sulphate contents in terms of SO_4 for direct comparison with BRE Special Digest 1 (2005).
sulphate content determined by gravimetric method (test 5.5).

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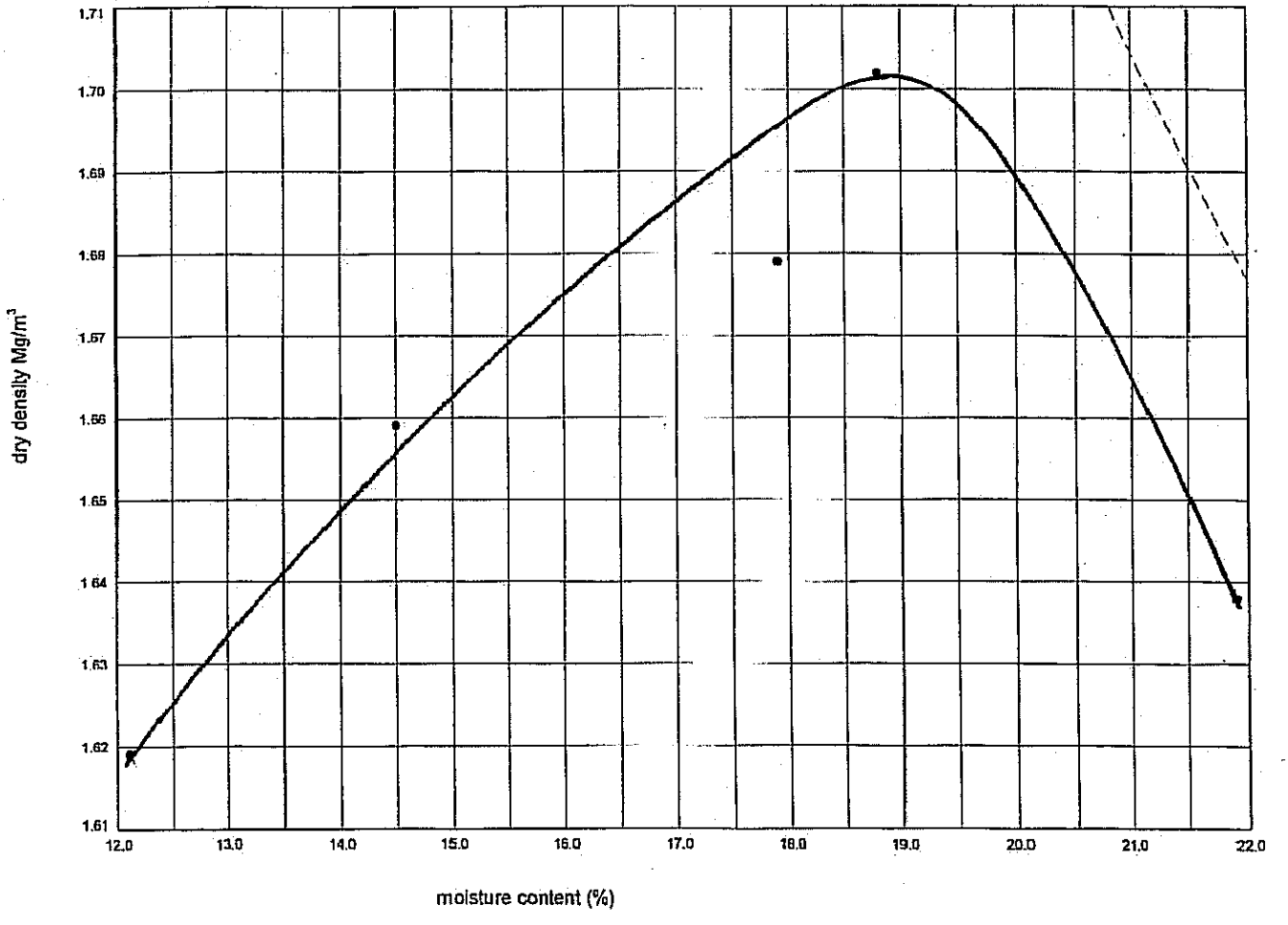
DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	PLYMOUTH CITY COUNCIL	BH/TP No.	TP01
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	0.30
DESCRIPTION	Brown slightly sandy CLAY with a little f-c gravel	SPECIMEN DEPTH (m)	0.30



test method	3.4.4.1 2.5kg dynamic compaction - CBR mould			
preparation procedure	3.2.5.1 (grading zone 3)			
proportion retained on 37.5mm sieve (%)	0	maximum dry density	(Mg/m³)	1.70
proportion retained on 20mm sieve (%)	8.75	optimum moisture content	(%)	19
particle density (Mg/m³)	#2.65			

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned an assumed value

ORIGINATOR

CONTRACT 19065

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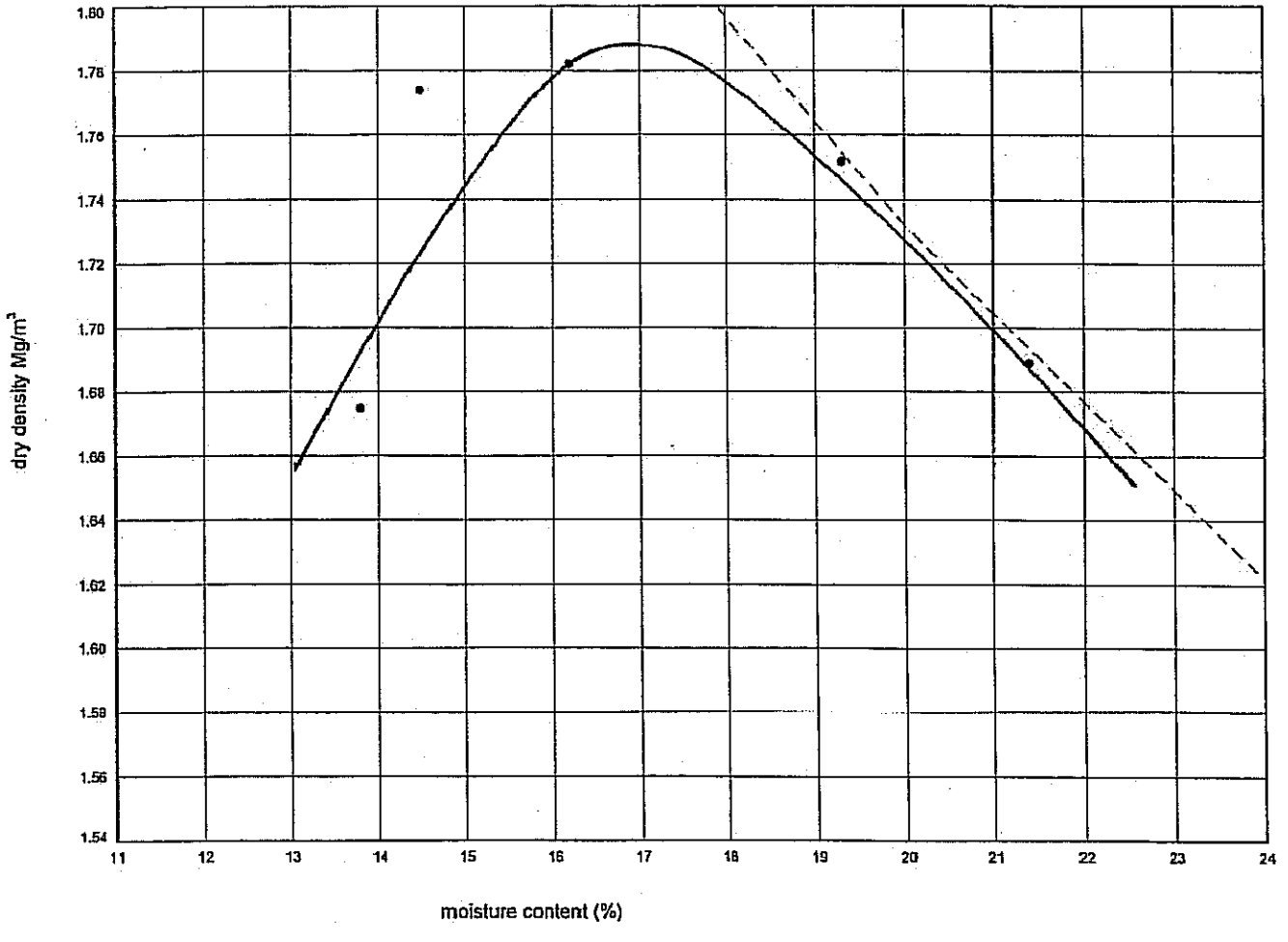
Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527745 19065.GPJ 22/07/2008 15:03:32

Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	PLYMOUTH CITY COUNCIL	BH/TP No.	TP02
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH	SAMPLE No./TYPE	2B
		SAMPLE DEPTH (m)	0.35
DESCRIPTION	Brown mottled orange-brown slightly sandy CLAY with a little mudstone gravel	SPECIMEN DEPTH (m)	0.35



test method	3.3.4.1 2.5kg dynamic compaction - 1L mould			
preparation procedure	3.2.6.2 (grading zone 2, crushable)			
proportion retained on 37.5mm sieve (%)	0	maximum dry density	(Mg/m³)	1.79
proportion retained on 20mm sieve (%)	2.5	optimum moisture content	(%)	17
particle density (Mg/m³)	#2.70			

remarks:

– – – – – represents 0% air voids curve

# denotes particle density has been assigned an assumed value

ORIGINATOR	
CONTRACT 19065	CHECKED

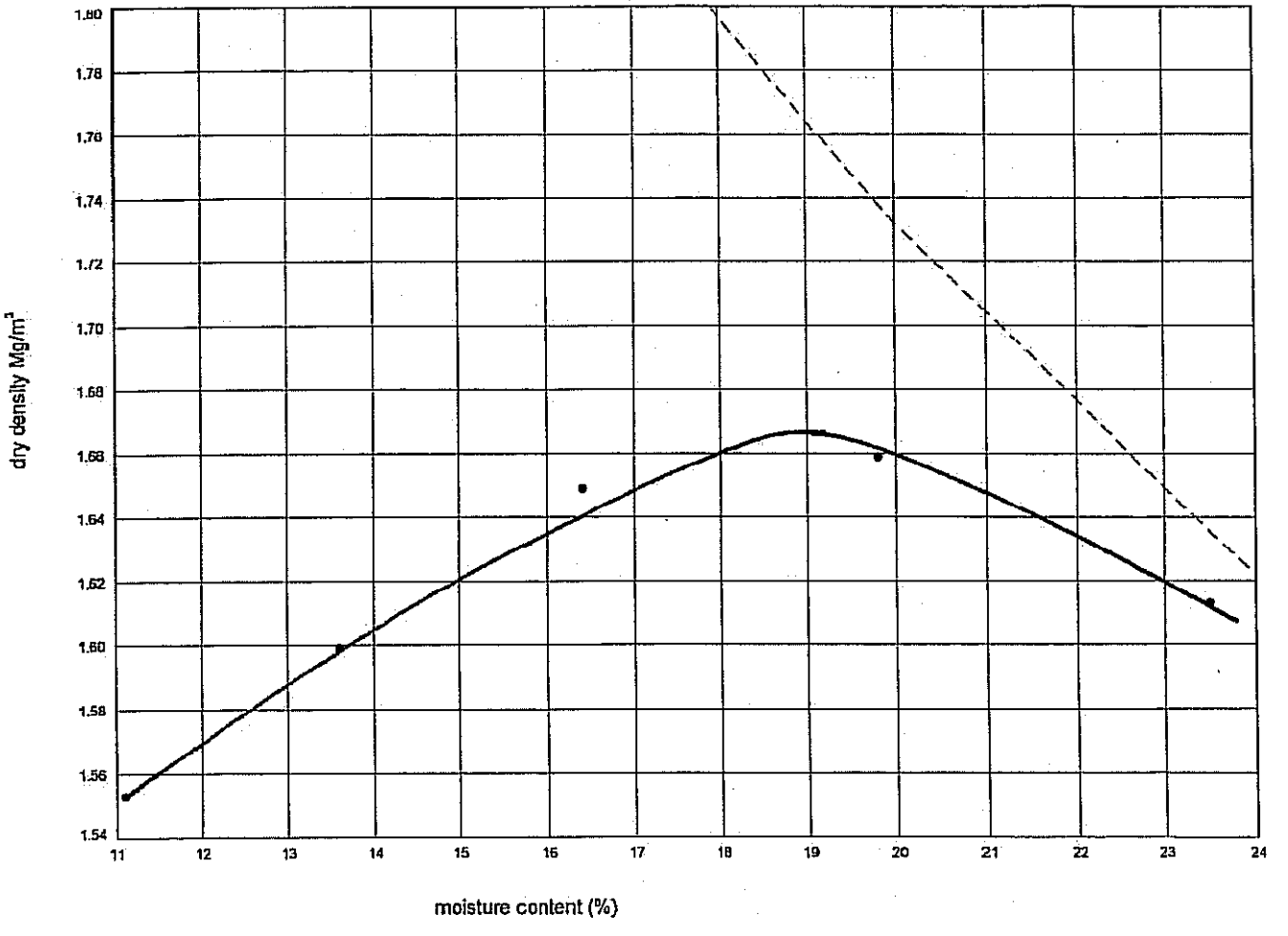
Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527743 19065.GPJ 21/07/2006 14:26:35

Geotechnical Engineering Limited

DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

BS.1377 : Part 4 : 1990 : 3

CLIENT	PLYMOUTH CITY COUNCIL	BH/TP No.	TP02
SITE	ESTOVER COMMUNITY COLLEGE, PLYMOUTH	SAMPLE No./TYPE	4B
		SAMPLE DEPTH (m)	0.70
DESCRIPTION	Brown SILT with some f-c gravel	SPECIMEN DEPTH (m)	0.70



test method preparation procedure	3.3.4.1 2.5kg dynamic compaction - 1L mould 3.2.4.2 (grading zone 2)		
proportion retained on 37.5mm sieve (%) proportion retained on 20mm sieve (%) particle density (Mg/m³)	0 3.2 #2.70	maximum dry density (Mg/m³) optimum moisture content (%)	1.67 19

remarks:

——— represents 0% air voids curve

# denotes particle density has been assigned an assumed value

ORIGINATOR

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APPENDIX C

CHEMICAL ANALYSIS

ALcontrol Geochem

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: mkt@alcontrol.co.uk
website: www.alcontrol.co.uk

Geotechnical Eng. Ltd
Rock House
Lower Tuffley Lane
Gloucester
GL2 5DT ATTN: Lyndon Barton

CERTIFICATE OF ANALYSIS

Date: 27 July, 2006
Our Reference: 06/11172/02/01
Your Reference: 19065
Location: Estover Community College

A total of 3 samples was received for analysis on Saturday, 01 July 2006 and completed on Friday, 14 July 2006. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials- whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Signed

Diane Whittlestone	Jane Seymour	David O'Hare	Caroline Suttie
Customer Services	Customer Services	Customer Services	Customer Services

Valid if signed by any of the above signatories.

Compiled By

Byron Hagan

MCERTS

UKAS TESTING
1291

GROUP

ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 06/11172/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Lyndon Barton
DATE OF RECEIPT : 01/07/06
LOCATION : Estover Community College

BATCH NUMBER : 1
CLIENT REF/CODE : 19065
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

					UKAS Accredited ?	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓					✓	✓	✓				
Sample Number	Sample Identity	P / V	Depth	Sample Type		Metals ICP. 9 (S)	Boron Water Soluble (S	Cyanide Total (S)	Sulphide Acid Soluble (S)	pH (S)	PAH Spec MS (S)	Phenols Spec MS (S)	Sulphate Soluble Kone 2:1 (S)	EPH CWG GC (S)	GRO CWG GC (S)	TOC (S)	PCB 7 Congeners (S)	Mineral Oil C10-40 (S)	Coronene EZ (S)	CEN Leach 2:1	Moisture Content Natural (105C) (S)	CEN Leach 8:1	Metals ICP-MS 9 (CEN 2:1)	Metals ICP-MS 9 (CEN 8:1)	Metals ICP-MS 9 (CEN 10:1C)	Barium (CEN 2:1) (ICP-MS)	Barium (CEN 8:1) (ICP-MS)	Barium (CEN 10:1C) (ICP-MS)	Molybdenum (CEN 2:1) (ICP-MS)
1	SA01	TUB	0.30	SOIL		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	TP 01	TUB	0.30	SOIL		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	TP05	TUB	0.90	SOIL		X	X	X	X	X	X	X	X	X	X														
					Total Number of Tests	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Printed : 20/07/06 10:10:43

ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 06/11172/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Lyndon Barton
DATE OF RECEIPT : 01/07/06
LOCATION : Estover Community College

BATCH NUMBER : 1
CLIENT REF/CODE : 19065
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

					UKAS Accredited ?																								
Sample Number	Sample Identity	P / V	Depth	Sample Type	Molybdenum (CEN 8:1) /ICP-MS\	Molybdenum (CEN 10:1C) /ICP-MS\	Mercury (CEN 2:1) /CVAA\	Mercury (CEN 8:1) /CVAA\	Mercury (CEN 10:1C) /CVAA\	Antimony (CEN 2:1) /ICP-MS\	Antimony (CEN 8:1) /ICP-MS\	Antimony (CEN 10:1C) /ICP-MS\	Chloride Kone (CEN 2:1)	Chloride Kone (CEN 8:1)	Chloride Kone (CEN 10:1C)	Fluoride Kone (CEN 2:1)	Fluoride Kone (CEN 8:1)	Fluoride Kone (CEN 10:1C)	Sulphate Kone (CEN 2:1)	Sulphate Kone (CEN 8:1)	Sulphate Kone (CEN 10:1C)	Phenols HPLC (CEN 2:1)	Phenols HPLC (CEN 8:1)	Phenols HPLC (CEN 10:1C)	DOC (CEN 2:1)	DOC (CEN 8:1)	DOC (CEN 10:1C)	TDS (CEN 2:1)
1	SA01	TUB	0.30	SOIL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	TP 01	TUB	0.30	SOIL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	TP05	TUB	0.90	SOIL																									
				Total Number of Tests	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Printed : 20/07/06 10:10:43

ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 06/11172/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Lyndon Barton
DATE OF RECEIPT : 01/07/06
LOCATION : Estover Community College

BATCH NUMBER : 1
CLIENT REF/CODE : 19065
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

		UKAS Accredited ?				
Sample Number	Sample Identity	P / V	Depth	Sample Type	TDS (CEN 8:1)	TDS (CEN 10:1C)
1	SA01	TUB	0.30	SOIL	X	X
2	TP 01	TUB	0.30	SOIL	X	X
3	TP05	TUB	0.90	SOIL		
			Total Number of Tests		2	2

Printed : 20/07/06 10:10:43

ALcontrol Geochem Analytical Services
Sample Descriptions

Job Number: 06/11172/02/01
Client: Geotechnical Eng. Ltd
Client Ref : 19065

Grain sizes

<0.063mm	Very Fine
0.1mm - 0.063mm	Fine
0.1mm - 2mm	Medium
2mm - 10mm	Coarse
>10mm	Very Coarse

Sample Identity	Depth (m)	Colour	Grain Size	Description	Batch
SA01	0.30	Light Brown	0.1mm - 0.063mm	Clay with some Stones	1
TP 01	0.30	Brown	0.1mm - 0.063mm	Top Soil with some Stones	1
TP05	0.90	Rust	0.1mm - 0.063mm	Gravel with some Stones	1

* These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials-whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.
Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01	TP05							Method Code	LoD/Units
Depth (m)	0.30	0.30	0.90								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date	02.07.06	02.07.06	02.07.06								
Sample Received Date	01.07.06	01.07.06	01.07.06								
Batch	1	1	1								
Sample Number(s)	1	2	3								
Boron Water Soluble	3	<1	<1							TM129#M	<1 mg/kg
Arsenic	23	24	29							TM129#M	<1 mg/kg
Cadmium	<1	<1	<1							TM129#M	<1 mg/kg
Chromium	32	34	36							TM129#M	<1 mg/kg
Copper	27	15	29							TM129#M	<1 mg/kg
Lead	51	46	43							TM129#M	<1 mg/kg
Mercury	<1.2	<1.2	<1.2							TM129#M	<1.2 mg/kg
Nickel	54	40	47							TM129#M	<1 mg/kg
Selenium	<3	<3	<3							TM129#M	<3 mg/kg
Zinc	114	110	123							TM129#M	<1 mg/kg
Water Soluble Sulphate as SO4 2:1 Extract	0.007	0.013	0.007							TM098#M	<0.003 g/l
Acid Soluble Sulphide	<50	<50	<50							TM101#	<50 mg/kg
Total Organic Carbon	0.23	0.83	-							TM050#	<0.01 %
Total Cyanide	<1	<1	<1							TM153#M	<1 mg/kg
pH Value	7.92	7.33	7.01							TM133#M	<1.00 pH Units

All results expressed on a dry weight basis.

Date 20.07.2006

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ALcontrol Geochem Analytical Services
Table Of Results

[#] ISO 17025 accredited
[M] MCERTS accredited
[*] Subcontracted test
[»] Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01	TP05							Method Code	LoD/Units
Depth (m)	0.30	0.30	0.90								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date	02.07.06	02.07.06	02.07.06								
Sample Received Date	01.07.06	01.07.06	01.07.06								
Batch	1	1	1								
Sample Number(s)	1	2	3								
GRO (C4-C12)	<10	<10	<10							TM089#M	<10 ug/kg
MTBE	<10	<10	<10							TM089#	<10 ug/kg
Benzene	<10	<10	<10							TM089#M	<10 ug/kg
Toluene	<10	<10	<10							TM089#M	<10 ug/kg
Ethyl benzene	<10	<10	<10							TM089#M	<10 ug/kg
m & p Xylene	<10	<10	<10							TM089#M	<10 ug/kg
o Xylene	<10	<10	<10							TM089#M	<10 ug/kg
Aliphatics C5-C6	<10	<10	<10							TM089	<10 ug/kg
Aliphatics >C6-C8	<10	<10	<10							TM089	<10 ug/kg
Aliphatics >C8-C10	<10	<10	<10							TM089	<10 ug/kg
Aliphatics >C10-C12	<10	<10	<10							TM089	<10 ug/kg
Aliphatics >C12-C16	573	553	470							TM061#	<100 ug/kg
Aliphatics >C16-C21	213	150	<100							TM061#	<100 ug/kg
Aliphatics >C21-C35	3023	920	566							TM061#	<100 ug/kg
Total Aliphatics C5-C35	3809	1623	1036							TM61/89	<100 ug/kg
Aromatics C6-C7	<10	<10	<10							TM089#M	<10 ug/kg
Aromatics >C7-C8	<10	<10	<10							TM089#M	<10 ug/kg
Aromatics >EC8-EC10	<10	<10	<10							TM089	<10 ug/kg
Aromatics >EC10-EC12	<10	<10	<10							TM089	<10 ug/kg
Aromatics >EC12-EC16	162	<100	123							TM061#	<100 ug/kg
Aromatics >EC16-EC21	<100	<100	<100							TM061#	<100 ug/kg
Aromatics >EC21-EC35	323	840	396							TM061#	<100 ug/kg
Total Aromatics C6-C35	485	840	519							TM61/89	<100 ug/kg
TPH (Aliphatics and Aromatics C5-C35)	4294	2463	1555							TM61/89	<100 ug/kg

All results expressed on a dry weight basis.

Date 20.07.2006

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Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01	TP05							Method Code	LoD/Units
Depth (m)	0.30	0.30	0.90								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date	02.07.06	02.07.06	02.07.06								
Sample Received Date	01.07.06	01.07.06	01.07.06								
Batch	1	1	1								
Sample Number(s)	1	2	3								
Mineral Oil	<1	<1	-							TM061#	<1 mg/kg
Coronene	<2	<2	-							TM154	<2 mg/kg

All results expressed on a dry weight basis.

Date 20.07.2006

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ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01	TP05							Method Code	LoD/Units
Depth (m)	0.30	0.30	0.90								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date	02.07.06	02.07.06	02.07.06								
Sample Received Date	01.07.06	01.07.06	01.07.06								
Batch	1	1	1								
Sample Number(s)	1	2	3								
PAH by GCMS											
Naphthalene	59	93	67							TM074#	<10 ug/kg
Acenaphthylene	10	13	9							TM074#M	<5 ug/kg
Acenaphthene	<14	<14	<14							TM074#M	<14 ug/kg
Fluorene	<12	<12	<12							TM074#M	<12 ug/kg
Phenanthrene	61	42	23							TM074#M	<21 ug/kg
Anthracene	29	<9	<9							TM074#M	<9 ug/kg
Fluoranthene	69	<25	<25							TM074#M	<25 ug/kg
Pyrene	68	26	<22							TM074#M	<22 ug/kg
Benz(a)anthracene	54	24	<12							TM074#M	<12 ug/kg
Chrysene	82	16	<10							TM074#M	<10 ug/kg
Benzo(b)fluoranthene	155	18	<16							TM074#M	<16 ug/kg
Benzo(k)fluoranthene	102	<25	<25							TM074#M	<25 ug/kg
Benzo(a)pyrene	108	<12	<12							TM074#M	<12 ug/kg
Indeno(123cd)pyrene	85	<11	<11							TM074#M	<11 ug/kg
Dibenzo(ah)anthracene	25	<8	<8							TM074#M	<8 ug/kg
Benzo(ghi)perylene	124	15	<10							TM074#M	<10 ug/kg
PAH 16 Total	1031	247	99							TM074#	<25 ug/kg

All results expressed on a dry weight basis.

Date 20.07.2006

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01	TP05							Method Code	LoD/Units
Depth (m)	0.30	0.30	0.90								
Sample Type	SOIL	SOIL	SOIL								
Sampled Date	02.07.06	02.07.06	02.07.06								
Sample Received Date	01.07.06	01.07.06	01.07.06								
Batch	1	1	1								
Sample Number(s)	1	2	3								
PCB 7 Congeners											
PCB congener 28	<1	<1	-							TM070	<1 ug/kg
PCB congener 52	<1	<1	-							TM070	<1 ug/kg
PCB congener 101	<1	<1	-							TM070	<1 ug/kg
PCB congener 118	<1	<1	-							TM070	<1 ug/kg
PCB congener 153	<1	<1	-							TM070	<1 ug/kg
PCB congener 138	<1	<1	-							TM070	<1 ug/kg
PCB congener 180	<1	<1	-							TM070	<1 ug/kg
Total of 7 Congener PCBs	<1	<1	-							TM070	<1 ug/kg
Phenol	<1	<1	<1							TM072	<1 ug/kg
2-Chlorophenol	<1	<1	<1							TM072	<1 ug/kg
2,4-Dimethylphenol	<1	<1	<1							TM072	<1 ug/kg
4-Chloro-3-methylphenol	<1	<1	<1							TM072	<1 ug/kg
2,4-Dichlorophenol	<1	<1	<1							TM072	<1 ug/kg
2-Nitrophenol	<1	<1	<1							TM072	<1 ug/kg
2,4,6-Trichlorophenol	<1	<1	<1							TM072	<1 ug/kg
4-Nitrophenol	<1	<1	<1							TM072	<1 ug/kg
Pentachlorophenol	<1	<1	<1							TM072	<1 ug/kg
Phenols Total of 9 Speciated	<1	<1	<1							TM072	<1 ug/kg

All results expressed on a dry weight basis.

Date 20.07.2006

Validated ✓
Preliminary

ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
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* Subcontracted test
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Job Number: 06/11172/02/01 **Matrix:** LEACHATE
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01								Method Code	LoD/Units
Depth (m)	0.30	0.30									
Sample Type	SOIL	SOIL									
Sampled Date	02.07.06	02.07.06									
Sample Received Date	01.07.06	01.07.06									
Batch	1	1									
Sample Number(s)	1	2									
Antimony Dissolved (CEN 10:1C) (ICP-MS)	<0.04	<0.04								TM152	mg/kg
Arsenic Dissolved (CEN 10:1C) (ICP-MS)	<0.008	<0.008								TM152	mg/kg
Barium Dissolved (CEN 10:1C) (ICP-MS)	1.090	0.738								TM152	mg/kg
Boron Dissolved (CEN 10:1C) (ICP-MS)	0.62	1.11								TM152	mg/kg
Cadmium Dissolved (CEN 10:1C) (ICP-MS)	<0.0032	<0.0032								TM152	mg/kg
Chromium Dissolved (CEN 10:1C) (ICP-MS)	0.018	0.024								TM152	mg/kg
Copper Dissolved (CEN 10:1C) (ICP-MS)	0.192	0.766								TM152	mg/kg
Lead Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.020								TM152	mg/kg
Molybdenum Dissolved (CEN 10:1C) (ICP-MS)	0.008	0.020								TM152	mg/kg
Nickel Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.026								TM152	mg/kg
Selenium Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.012								TM152	mg/kg
Zinc Dissolved (CEN 10:1C) (ICP-MS)	<0.024	0.076								TM152	mg/kg
Mercury Dissolved (CEN 10:1C) (CVAA)	<0.0004	<0.0004								TM127	mg/kg
Chloride (CEN 10:1C)	<8	<8								TM097	mg/kg
Fluoride (CEN 10:1C)	<4	7								TM104	mg/kg
Sulphate (CEN 10:1C)	100	62								TM098	mg/kg
Dissolved Organic Carbon (CEN 10:1C)	30	32								TM090	mg/kg
Total Dissolved Solids (CEN 10:1C)	468	238								TM123	mg/kg
Phenols Monohydric (CEN 10:1C)	<0.08	<0.08								TM062	mg/kg

Date 20.07.2006

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ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** LEACHATE
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01								Method Code	LoD/Units
Depth (m)	0.30	0.30									
Sample Type	SOIL	SOIL									
Sampled Date	02.07.06	02.07.06									
Sample Received Date	01.07.06	01.07.06									
Batch	1	1									
Sample Number(s)	1	2									
Antimony Dissolved (CEN 2:1) (ICP-MS)	<5	<5								TM152	<5 ug/l
Antimony Dissolved (CEN 8:1) (ICP-MS)	<5	<5								TM152	<5 ug/l
Antimony Dissolved (CEN 10:1C) (ICP-MS)	<0.04	<0.04								TM152	mg/kg
Arsenic Dissolved (CEN 2:1) (ICP-MS)	<1	2								TM152	<1 ug/l
Arsenic Dissolved (CEN 8:1) (ICP-MS)	<1	<1								TM152	<1 ug/l
Arsenic Dissolved (CEN 10:1C) (ICP-MS)	<0.008	<0.008								TM152	mg/kg
Barium Dissolved (CEN 2:1) (ICP-MS)	169	209								TM152	<1 ug/l
Barium Dissolved (CEN 8:1) (ICP-MS)	94	40								TM152	<1 ug/l
Barium Dissolved (CEN 10:1C) (ICP-MS)	1.090	0.738								TM152	mg/kg
Boron Dissolved (CEN 2:1) (ICP-MS)	62	103								TM152	<10 ug/l
Boron Dissolved (CEN 8:1) (ICP-MS)	62	113								TM152	<10 ug/l
Boron Dissolved (CEN 10:1C) (ICP-MS)	0.62	1.11								TM152	mg/kg
Cadmium Dissolved (CEN 2:1) (ICP-MS)	<0.4	<0.4								TM152	<0.4 ug/l
Cadmium Dissolved (CEN 8:1) (ICP-MS)	<0.4	<0.4								TM152	<0.4 ug/l
Cadmium Dissolved (CEN 10:1C) (ICP-MS)	<0.0032	<0.0032								TM152	mg/kg
Chromium Dissolved (CEN 2:1) (ICP-MS)	1	4								TM152	<1 ug/l
Chromium Dissolved (CEN 8:1) (ICP-MS)	2	2								TM152	<1 ug/l
Chromium Dissolved (CEN 10:1C) (ICP-MS)	0.018	0.024								TM152	mg/kg
Copper Dissolved (CEN 2:1) (ICP-MS)	96	11								TM152	<1 ug/l
Copper Dissolved (CEN 8:1) (ICP-MS)	<1	93								TM152	<1 ug/l
Copper Dissolved (CEN 10:1C) (ICP-MS)	0.192	0.766								TM152	mg/kg
Lead Dissolved (CEN 2:1) (ICP-MS)	<1	2								TM152	<1 ug/l
Lead Dissolved (CEN 8:1) (ICP-MS)	<1	2								TM152	<1 ug/l
Lead Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.020								TM152	mg/kg
Molybdenum Dissolved (CEN 2:1) (ICP-MS)	<1	2								TM152	<1 ug/l
Molybdenum Dissolved (CEN 8:1) (ICP-MS)	1	2								TM152	<1 ug/l
Molybdenum Dissolved (CEN 10:1C) (ICP-MS)	0.008	0.020								TM152	mg/kg
Nickel Dissolved (CEN 2:1) (ICP-MS)	<1	1								TM152	<1 ug/l
Nickel Dissolved (CEN 8:1) (ICP-MS)	<1	3								TM152	<1 ug/l
Nickel Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.026								TM152	mg/kg
Selenium Dissolved (CEN 2:1) (ICP-MS)	<1	6								TM152	<1 ug/l

Supplemental Report

Date 20.07.2006

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 06/11172/02/01 **Matrix:** LEACHATE
Client: Geotechnical Eng. Ltd **Location:** Estover Community College
Client Ref. No.: 19065 **Client Contact:** Lyndon Barton

Sample Identity	SA01	TP 01								Method Code	LoD/Units
Depth (m)	0.30	0.30									
Sample Type	SOIL	SOIL									
Sampled Date	02.07.06	02.07.06									
Sample Received Date	01.07.06	01.07.06									
Batch	1	1									
Sample Number(s)	1	2									
Selenium Dissolved (CEN 8:1) (ICP-MS)	<1	<1								TM152	<1 ug/l
Selenium Dissolved (CEN 10:1C) (ICP-MS)	<0.008	0.012								TM152	mg/kg
Zinc Dissolved (CEN 2:1) (ICP-MS)	<3	38								TM152	<3 ug/l
Zinc Dissolved (CEN 8:1) (ICP-MS)	<3	<3								TM152	<3 ug/l
Zinc Dissolved (CEN 10:1C) (ICP-MS)	<0.024	0.076								TM152	mg/kg
Mercury Dissolved (CEN 2:1) (CVAA)	<0.05	<0.05								TM127	<0.05 ug/l
Mercury Dissolved (CEN 8:1) (CVAA)	<0.05	<0.05								TM127	<0.05 ug/l
Mercury Dissolved (CEN 10:1C) (CVAA)	<0.0004	<0.0004								TM127	mg/kg
Chloride (CEN 2:1)	3	3								TM097	<1 mg/l
Chloride (CEN 8:1)	<1.00	<1.00								TM097	<1 mg/l
Chloride (CEN 10:1C)	<8	<8								TM097	mg/kg
Fluoride (CEN 2:1)	0.6	0.7								TM104	<0.5 mg/l
Fluoride (CEN 8:1)	<0.5	0.7								TM104	<0.5 mg/l
Fluoride (CEN 10:1C)	<4	7								TM104	mg/kg
Sulphate (CEN 2:1)	50	19								TM098	<3 mg/l
Sulphate (CEN 8:1)	<3	3								TM098	<3 mg/l
Sulphate (CEN 10:1C)	100	62								TM098	mg/kg
Dissolved Organic Carbon (CEN 2:1)	3	4								TM090	<1 mg/l
Dissolved Organic Carbon (CEN 8:1)	3	3								TM090	<1 mg/l
Dissolved Organic Carbon (CEN 10:1C)	30	32								TM090	mg/kg
Total Dissolved Solids (CEN 2:1	78	51								TM123	<5 mg/l
Total Dissolved Solids (CEN 8:1	39	17								TM123	<5 mg/l
Total Dissolved Solids (CEN 10.1C)	468	238								TM123	mg/kg
Phenols Monohydric (CEN 2:1)	<0.01	<0.01								TM062	<0.01 mg/l
Phenols Monohydric (CEN 8:1)	<0.01	<0.01								TM062	<0.01 mg/l
Phenols Monohydric (CEN 10:1C)	<0.08	<0.08								TM062	mg/kg

Supplemental Report

Date 20.07.2006

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 06/11172/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 19065

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	»	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture content and description			WET	
TM050	Method 5310B, AWWA/APHA, 20th Ed., 1999 / DIN EN 13137	Total Organic Carbon determination by combustion method	✓		DRY	
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	✓		DRY	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection			NA	
TM070	Modified: US EPA Method 8250 & 625	Determination of Total Polychlorinated Biphenyls (PCB's) as Arrolor 1254 and the ICR 7 Congeners by GC-MS			DRY	
TM072	Modified: US EPA Method 8141A	Determination of Phenols by GC-MS			WET	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS	✓		DRY	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS	✓	✓	DRY	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓	✓	WET	
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water			NA	
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser			NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser			NA	

[1] Applies to Solid samples only. **DRY** indicates samples have been dried at 35°C. **NA** = not applicable.

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 06/11172/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 19065

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

NDP	No Determination Possible	*	Subcontracted test
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#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓	✓	DRY	
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser	✓		WET	
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser			NA	
TM123	BS 2690: Part 121:1981	The Determination of Total dissolved Solids in Water			NA	
TM127	Method 3112B, AWWA/APHA, 20th Ed., 1999	The Determination of Trace Level Mercury in Aqueous Media and Soil Extracts by Atomic Absorption Spectroscopy			NA	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓	✓	DRY	
TM133	BS 1377: Part 3 1990	Determination of pH in Soil and Water using the GLpH pH Meter	✓	✓	WET	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS			NA	
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser	✓	✓	WET	
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40			WET	
TM61/89		see TM061 and TM089 for details			WET	

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 06/11172/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 19065

Summary of Coolbox temperatures

Batch No.	Coolbox Temperature (°C)
1	13

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for one month after analysis is completed (emailed) for both soil jars and tubs. All waters, volatile jars and vials will be discarded after one month of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Geochem reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If asbestos is detected, then identification is carried out by ALcontrol Shutler. If a sample is suspected of containing asbestos, then further preparation and analysis will be suspended on that sample until the asbestos result is known. If asbestos is present, then no further analysis will be undertaken.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule.

8. NDP – No determination possible due to insufficient/unsuitable sample.

9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.

10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

11. **Surrogate recoveries** – Currently the only analyses which are surrogate corrected are EPH and PAHs on soils.

12. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

13. Phenols monohydric by HPLC includes phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

14. Total of 8 speciated phenols by HPLC includes Resorcinol, Catechol, Phenol, Napthol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, cresols and xylenols (as detailed in 13).

15. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

MCERTS

1. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these material- whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

2. It should be noted that for a particular set of data some of the data may not always meet the precision ad bias criteria as prescribed by MCERTS. This is because whilst criteria were met when the method was originally validated, specific criteria for on going AQC were not set by the Environment Agency, so that the point of reference becomes the criteria usedfor the original validation. The precision and bias data for the certified reference material (CRM), used in the method may itself fall outside these criteria and as a result the samples associated with the batch in question do not strictly meet the MCERTS criteria. This issue is common to all UK laboratories although in practice this is not always reported as such. However in the interests of maintaining strict conformance with both MCERTS and UKAS ISO17025 such data are flagged by ALcontrol as not claiming MCERTS, but still meets the requirements of ISO17025. This should not detract from the usability of such data in terms of their application to the existing project.

Last updated April 2006

ALCONTROL GEOCHEM - MCERTS UPDATE (10th April 2006)

Annex A (normative)

Table 1 - Performance characteristics (metals and organometallics)	UKAS	MCERTS
Antimony	yes	yes
Arsenic	yes	yes
Barium	yes	yes
Beryllium	yes	yes
Boron (water soluble)	yes	yes
Cadmium	yes	yes
Cobalt	yes	yes
Copper	yes	yes
Chromium	yes	yes
Iron	yes	yes
Lead	yes	yes
Manganese	yes	yes
Mercury	yes	yes
Molybdenum	yes	yes
Nickel	yes	yes
Organolead compounds	no	no
Organotin compounds	no	no
Selenium	yes	yes
Thallium	yes	p
Vanadium	yes	yes
Zinc	yes	yes

Table 2 - Performance characteristics (inorganics)	UKAS	MCERTS
Easily liberated cyanide	yes	yes
Complex cyanide	yes	yes
pH	yes	yes
LOI	yes	yes
Sulphide	yes	p
Sulphate	yes	yes
Sulphur	yes	yes
Thiocyanate	yes	yes
Exchangeable Ammonium	yes	yes

Tabel 3 - Performance characteristics (organics)	UKAS	MCERTS
Benzene (GC- FID & GC-MS)	yes	yes
Benzo[a]pyrene (GC-MS)	yes	yes
Chlorobenzene	yes	yes
Chloromethane	yes	p
Chlorophenol (2-chlorophenol)	yes	yes
Chlorotoluene(2-chlorotoluene, 4-chlorotoluene)	yes	p
1,2-dichloroethane	yes	p
Dichloromethane	yes	p
"Dioxins"	no	no
Ethylbenzene	yes	p
"Furans"	no	no
Hexachlorobutadiene (SVOC)	yes	yes
"Hydrocarbons"	yes	yes
"Nitroaromatics"	yes	no
Pentachlorophenol	p	p
"Phenols" - Phenol by HPLC	yes	yes
"Phthalate esters"	p	p
"Polyaromatic hydrocarbons" by GC-MS	yes	yes, exc naphthalene
"Polychlorinated biphenyls" (Aroclors)	yes	yes
Tetrachloroethane (1,1,1,2)	yes	yes
Tetrachloroethene	yes	p
Tetrachloromethane (carbon tetrachloride)	yes	yes
Toluene (GC-FID)	yes	yes
Trichloroethane	yes	yes
Trichloroethene	yes	yes
Trichloromethane (chloroform)	yes	yes
Vinyl chloride	yes	yes
Xylene (GC-FID)	yes	yes

yes - accreditation awarded
p = pending - data meeting MCERTS criteria submitted to UKAS - awaiting certification
no = not being submitted in the near future